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A Clinical Lecture
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PUNCTURED FRACTURES OF THE BASE OF THE SKULL.

Delivered at the Leeds General Infirmary,

BY R. LAWFORD KNAGGS, M.C. CANTAB.,
SURGEON TO THE INFIRMARY.

GENTLEMEN,—I wish to speak to you to-day about certain fractures of the skull which possess features of great interest. Fractures of the base are of three kinds: (*a*) fissures, the causation of which is still a ground of controversy; (*b*) comminuted fractures resulting from direct and great violence and which may be depressed; and (*c*) punctured fractures. The first variety is common, the second much less so, and the third is probably very infrequent, notwithstanding statements to the contrary, and when met with is usually unexpected. Though punctured fractures of the base have received but scant attention in surgical text-books they constitute a group which presents very marked peculiarities. These are of such importance that they justify the consideration of the group apart from similar injuries of the vertex upon which text-book accounts are usually based.

The rarity of these fractures is perhaps remarkable, for the configuration and structure of the base of the skull are such that penetrating wounds can easily be produced. But though the more vulnerable parts are sufficiently accessible to long, slender, and pointed objects, yet you will notice that they are most in danger when attacked from the front or the sides and there can be little doubt that the reason injuries of this nature are not more frequently met with is because the on-coming violence can be seen and, almost instinctively, avoided or minimised.

Anatomy.—If the base of the skull be examined it will be seen that the thin orbital plates and the brittle cribriform plate of the ethmoid can easily be pierced by a pointed instrument directed either through the orbit or the nose. It is possible, even without injury to the bone, for penetration of the middle fossa to occur through the anterior lacerated foramina along an orbital track, and a piece of tobacco pipe has been found in the cavernous sinus which had reached its destination in this way.[1] The floor of the middle fossa is much thicker than the orbital plates of the frontal bone but is still sufficiently thin to transmit light in most instances through the hollows that mark the points of pressure of the convolutions. The bone in this situation can easily be reached through the zygomatic fossa, the instrument entering through the cheek and perhaps passing between the jaws. A moderate amount of force would easily cause it to give way. The zygomatic arch forms quite a trap, and a pointed rod once pushed within it would, if the force were sufficient, almost certainly penetrate the skull. It might be directed against the base in the temporal fossa or the zygomatic fossa, or with a different inclination penetrate the anterior fossa after traversing the orbit. To the latter it could obtain access either by crashing through its outer bony wall or by hitting off the spheno-maxillary fissure. Next the buttress in the middle line formed by the body of the sphenoid is hollowed out into the sphenoidal sinuses and is really very thin. It would offer no serious obstacle to penetration, but it could only be assailed through the buccal or naso-pharyngeal cavities. The walls of the posterior fossa are, in the main, much stronger, but the thinner and often translucent parts upon which the lateral lobes of the cerebellum lie are protected by a mass of muscular insertions. This weak point has been penetrated from the mouth, the track passing between the transverse process of the atlas and the occiput. It would seem almost a necessity for such an injury to occur that the head should be placed in a condition of extreme extension upon the spine, and from the nature of the accident this was most likely to have been the case.

In this description the specially vulnerable portions of the base have been enumerated—the places where penetration can be and occasionally is produced by a comparatively slight amount of force. But no part of the base is exempt from the possibility of a penetrating fracture, provided it can be reached by a weapon sufficiently strong and under the influence of a force sufficiently great.

Three cases of punctured fracture of the base have come under my care in the infirmary and if I now describe them in some detail it is because each case has a special interest of its own and as a group they illustrate in a marked degree the peculiarities and the danger of this form of injury.

CASE 1. *Penetrating wound of the orbit; fracture of the left orbital plate of the frontal bone; slate pencil imbedded and overlooked; septicæmia (?); death.*—A girl, aged four years, was returning from school on Feb. 19th, 1904, with a slate pencil in her hand when she fell and wounded herself with it. She walked home and was taken to see Mr. H. Bailey of Horsforth the same afternoon, who gave chloroform and felt a portion of the pencil deeply placed in the orbit. He then directed the friends to take the child to the infirmary at once, and having received a very urgent call to another case at that moment he sent a verbal message by the mother. The child reached the infirmary about 9 P.M. and was carefully examined by a resident officer of proved capacity. The pencil was not detected and the patient was allowed to go home. It is needless to add that the message, as it was delivered, tended to mislead rather than to help. On the 20th the child vomited several times and towards evening became delirious. In the night Mr. Bailey found the temperature 104° F. On the next morning she was admitted. The temperature was then 104·6°, the pulse was 160, and the respirations were 52. She wandered in her talk and did not take in anything that was said to her. She was continually throwing her limbs about, but there were no convulsions, no paralysis, no rigidity of the limbs, and no retraction of the head and neck. The lids of the left eye were infiltrated with blood and much swollen and there was chemosis. With difficulty it was seen that the eye was depressed and it was subsequently ascertained that the child had had double vision after the accident. There was a small wound *above* the orbital margin and under an anæsthetic it was thought one end of the pencil could be felt through the swollen and tense upper lid. An incision through the lid enabled the pencil to be grasped with forceps, but it was so firmly fixed in the bone that it required a good pull to draw it out. A flap was next turned down from the forehead and the anterior fossa explored through a trephine aperture above the orbital ridge. The position of the supposed fracture was too far back to be exposed, but a searcher, passed over the part where it would be, detected no fragments of bone. It was also passed between the periosteum and the roof of the orbit without gaining further information. Finally, the flap was replaced and a drainage-tube passed along the track of the slate pencil through the incision made for its extraction. The pencil, which was about one and a half inches long, had entered by the wound *above* the eyebrow. The operation had no effect upon the symptoms and death took place at 6 P.M. on Feb. 21st.

At the necropsy no adequate cause of death was found. There was a small fracture—almost a fissure—of the left orbital plate of the frontal bone. It was half an inch long and was a quarter of an inch in front of the foramen lacerum anticum. Its edges were very slightly raised towards the brain. The dura mater had not been penetrated and there was a little blood adherent to it over the seat of the fracture. There was no meningitis. (Specimen A 12c, University of Leeds Pathological Museum.)

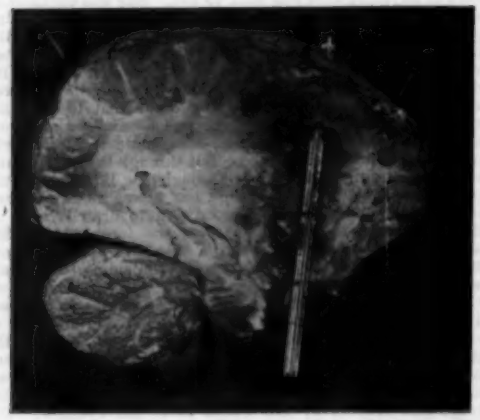
CASE 2. *Penetrating wound of the middle fossa; transfixion of brain.*—A boy, aged 14 years, was running along a workshop with a long iron rod in his hand when he tripped and fell and the rod penetrated his cheek. He pulled it out himself. This happened on Dec. 12th, 1901. The wound was dressed by a medical man who referred him to the infirmary for subsequent treatment. He seemed dazed after the accident. On the next day he presented himself at the casualty department with a septic inflamed wound in the right cheek and whilst waiting to be attended to he seemed unable to keep awake. This attracted the attention of the casualty officer and the boy was admitted. Beyond a slight elevation of temperature and marked drowsiness there was an entire absence of symptoms. When roused he would sit up and answer intelligently but in an apathetic way any questions addressed to him and as soon as they were discontinued he would drop down in bed and fall asleep at once. He would feed himself but would go to sleep between the mouthfuls. He would reach his urinal but would fall asleep with it in bed and probably upset it.

[1] Mackenzie: Diseases of the Eye, second edition, p. 17.

On the 16th the house surgeon asked permission to send him home, as beds were needed. On the 17th he was called to the lad at 9 A.M. because he had had a fit. On his arrival the convulsion had passed off but the patient was unconscious and evidently sinking. The convulsions recurred before death. The final scene only occupied half an hour.

Subsequently it was found that the rod, after penetrating the cheek, had passed inside the zygomatic arch, breaking back, but not detaching, a small fragment of the coronoid process of the mandible. It had then passed through the great wing of the sphenoid one-third of an inch external to the foramen rotundum. The aperture would admit the first phalanx of the little finger and thin plates of bone had been upturned towards the brain almost of the same size as the aperture. These plates of bone are well shown in the macerated specimen (A 12b, University of Leeds Pathological Museum).

The track in the brain began near the apex of the right temporo-sphenoidal lobe and, with an inclination inwards, passed through the posterior part of the frontal lobe and ended on the convexity close to the longitudinal fissure and about two and a half inches behind the frontal pole. The pia arachnoid was lacerated at the point of emergence but the dura mater was not perforated. The lenticular nucleus abutted on the posterior edge of the track and surrounding the latter for half an inch or more the brain tissue was infiltrated with blood and evidently much altered. The lateral ventricle does not appear to have been opened. (Specimen No. 77.)



Specimen No. 77, Pathological Museum of the Medical School of the Leeds University. From a boy whose brain was transfixed by an iron rod which entered through the cheek. He was not brought for treatment for several days and death occurred unexpectedly about a week later.

CASE 3. *Punctured wound of the anterior fossa; operation; cerebral abscess (?); second operation; recovery.*—On June 11th, 1904, a boy, aged 12 months, was left by his mother playing with a long bone crochet hook. On her return she found the child with the handle end of the hook protruding from the inner surface of the upper lip. On admission to the infirmary shortly after Mr. Coupland, the resident medical officer, extracted it. First marking with his finger the point at which it emerged from the lip he found that the end was engaged in bone and caught. Gradually turning it he disengaged the hooked end and withdrew it easily. The part that had penetrated measured three inches and from its direction it must have pierced the orbital plate of the frontal bone. Upon these facts I decided to explore. Through an incision along the supra-orbital ridge the roof of the orbit was examined and a fracture detected to the outer side of the middle line and half an inch from the ridge. A frontal flap was then turned down and through a large trephine opening above the ridge the dura mater was lifted up from the floor of the anterior fossa. A small round hole about six millimetres in diameter was seen in the bone and there was a corresponding aperture in the dura mater. A sharp fragment of bone was felt within the dura mater and easily extracted through the opening. It was insufficient to fill the hole in the bone, but no other fragment could be found. The dural aperture was inaccessible to suture. The flap was replaced and a light gauze packing left in in case the crochet hook had infected the parts. At first the progress was satisfactory and the wound slowly healed. A small abscess formed near the inner canthus in the second week and cleared up and there were one or two isolated acts of vomiting, but at the beginning of July the child became gradually torpid and dull and at last unconscious, though still able to swallow. On July 11th optic neuritis was developing in the left disc. On this date a further operation was performed. The trephine opening was exposed and the bulging dura mater slit open. The brain immediately began to protrude and presented a pearly white pulpy appearance. It pulsated freely, but was not at all like healthy brain tissue. The trephine opening was enlarged and the brain protruded until a hernia as big as a plum had formed. This was explored with a glass trocar which was pushed towards the part injured by the crochet hook, but nothing escaped. The flap was replaced over the hernia and held in position by two or three sutures. After this operation the child began to improve and to take notice of things and to behave like an ordinary baby. There was no more vomiting but the hernia increased. Some œdema developed in the left temporal region and the ends of the flap incision were separated by forceps and some sero-pus escaped. On the 14th a considerable amount of rather offensive pus escaped and next morning the hernia underneath the flap had very markedly subsided. From this date all went well and by August 7th there was no sign of any protrusion of brain through the opening in the skull and the child was convalescent. He was discharged on Sept. 9th.

During convalescence and when the bandages were removed an internal strabismus of the left eye was noticed. It disappeared after some months and very possibly may have been connected with injury to the external rectus muscle as the crochet hook pushed aside the eyeball in its passage across the orbit. The child is now perfectly well and presents no sign of any trouble resulting from the cerebral mischief.

Cases of this nature must always make a great impression upon those under whose care they fall, therefore it is astonishing to find how seldom they seem to be recorded. Plenty of cases could be brought forward, more particularly from the older writers such as Morgagni, Bonetus, and others, and it may be that these wounds, not a few of which were caused by swords, were more common in the Middle Ages when duels were of almost daily occurrence. Mackenzie, in a work on "Diseases of the Eye" (1835), gives details of 11 cases, all, however, occurring through the orbit. Let me now give you a short account of eight cases of later date. They are all well worth listening to and will help us to take a wider view of the subject and pave the way for its general consideration. Bullet wounds of the base I have purposely excluded, for they constitute quite a different class of injury, also with definite and distinctive features. They are not uncommon, and Dr. John A. Liddell has given an account of 135 cases which all recovered.[2]

CASE 4 (recorded by Dr. Cornelius Williams).—A butcher, aged 48 years, whilst hanging meat, fell against some iron hooks fixed to a beam and remained suspended for several minutes upon one, which transfixed his right cheek. He walked to a hospital and had the wound attended to at once. This happened on Nov. 16th. On the 19th he applied at the Mount Sinai Hospital on account of a blood-shot eye and chemosis. The cheek wound was suppurating. The real nature of the injury was not at this time diagnosed. Two days later, at his second visit, cerebral symptoms had appeared (pyrexia, stupidity, and pain in the head). The same night the site of the fracture in the orbital plate (1½ inches from the upper margin of the orbit and a little to the outer side) was exposed by dislocating the orbital contents downwards and inwards. On reaching the point of fracture a tablespoonful of very fœtid red-coloured pus escaped with a quantity of gas. Temporary relief followed, but death took place on Nov. 24th.

Post mortem it was found that the hook had entered the cheek and passed behind the zygomatic process of the malar bone through the spheno-maxillary fissure, fracturing the bones on either side, and through the roof of the orbit, producing a comminuted punctured fracture, lacerating the dura mater, and forcing several plates of the thin bone into the substance of the brain. There was a cone-shaped abscess

[2] American Journal of the Medical Sciences, vol. lxxxi., p. 335, 1881.

in the brain with its apex upward which was surrounded by a zone of diffuse cerebritis. There was also intense congestion of the entire brain and pus was observed in the pia mater of the vertex.[3]

CASE 5 (Specimen No. 851, Museum of the Royal College of Surgeons of England).—"The lower portion of the frontal bone and the adjoining portions of the nasal bones. A puncture passes through the orbital plate entering by the side of the right internal angular process and opening into the skull about half an inch to the right of the crista galli. The specimen was taken from a butcher's boy, aged 13 years, who inflicted the injury on himself whilst cutting a skewer, probably by thrusting the skewer into the orbit. Death took place four days after the accident, apparently owing to fresh hæmorrhage effused into the skull from a fall after the external wound had closed. (See *Edinburgh Monthly Journal of Medical Science*, 1842.) Presented by Dr. Peacock, 1876."

CASE 6. *Punctured fracture of the orbital plate; meningitis.*—A man, aged 40 years, fell from a scaffold and was admitted into the infirmary under the care of Mr. E. Ward. He could speak when admitted. He had an attack which resembled delirium tremens and died on the third day. Post mortem a small wound *above* the right eyebrow was found to lead into the cranial cavity. The orbital roof was punctured and the bone was somewhat comminuted. The under surface of the right frontal lobe was lacerated over the fracture and there was meningitis of the base extending into the spinal canal. There were other visceral injuries but the cause of death was the meningitis.

CASE 7. *Punctured fracture of the roof of the orbit; meningitis.*—This case is taken from a sensational paragraph in the *Yorkshire Evening Post*, entitled "A Bit of Wood in his Skull." A boy, aged three years, on Jan. 23rd was running about the house and playing as usual and carrying a piece of a clothes-peg in his hand. He fell and then blood was noticed coming from his eye. At the hospital the wound was attended to by the assistant house surgeon. At the inquest the medical evidence went to show that though a careful examination had been made the presence of a foreign body was not detected till Jan. 31st, when a piece of wood one and a half inches long and firmly imbedded in the skull was removed. The post-mortem examination showed that death was due to septic meningitis caused by the foreign body puncturing the roof of the orbit and the membranes of the brain. The observations of the coroner, thought worthy of reproduction, were the following: "He thought it was a most extraordinary thing that a piece of wood should get into a child's eye and should be undiscoverable for so many days, notwithstanding the numerous medical examinations that were made. They did not want to reflect improperly upon anyone, but it certainly gave the impression that there was not a proper examination of the eye made by the doctor who first saw it." The jury added a rider to their verdict to this effect: "That *they thought* [the italics are my own] that had the hospital doctor inquired how the cut occurred he might have considered it necessary to make a search for the piece of wood."

CASE 8. *Penetrating fracture of the base, passage of the weapon through the brain and the vault of the skull; recovery.*—This is the celebrated case of Phineas P. Gage, aged 25 years. Whilst engaged in blasting operations a smooth iron rod 3 feet 7 inches long and 1¼ inches in diameter, having a tapering point and weighing 13¼ pounds, passed completely through his head and high into the air. The rod passed through a wound in the cheek, external to the ascending ramus of the lower jaw, beneath the zygoma, entered the skull in the temporal fossa, and emerged where the two parietal bones join the frontal bone. There were much hæmorrhage and escape of brain matter. The patient spoke in a few minutes after the accident and could walk and give an account of how the accident happened very shortly after. He had a long illness[4] but nine or ten weeks later he was walking about the house and appeared likely to recover if he could be controlled. Dr. H. J. Bigelow, whose account I have followed, states: "from this extraordinary lesion the patient has quite recovered in his faculties of body and mind, with the loss only of the injured eye" (viz., the left, which was protruded at the time of the accident).[5]

CASE 9. *Penetration of the middle fossa by a railing spike; meningitis* (Mr. John Cowper's case).—A house painter, aged 25 years, fell with a ladder and struck his head sideways upon some railings. The terminal portion of a spike (more than two inches long) broke off and remained fixed in the skull. It entered under the apex of the mastoid process, traversed the internal ear, drove portions of the petrous bone through the dura mater, formed a considerable aperture in the bony floor of the middle fossa, and wounded deeply the posterior part of the right middle lobe. The spike was extracted but the patient died from meningitis nine days later. Except in the immediate vicinity of the wound the brain was normal.[6]

CASE 10. *Punctured fracture of the base; meningitis.*—Specimen 1086[60], Guy's Hospital Museum, is a portion of a frontal bone which has been pierced by a piece of wood. A man, aged 60 years, fell whilst running down hill and struck the right side of his head against a tree. A piece of wood was found to have entered the orbit from the outer side and caused destruction of the eye. He died two weeks later after cerebral symptoms had supervened. Post mortem a punctured fracture of the frontal bone was found close to the external angular process. Between the dura mater and the bone were found purulent lymph and small chips of wood (one round and pointed) and pieces of in-driven bone. On lifting up the dura mater a small hole was found in it opposite the fracture and the brain itself showed slight marks of injury and was softened, dark, and covered with inflammatory lymph at this part. (Constructed from the museum catalogue and the report of the post-mortem examination.)

CASE 11. *Punctured fracture of the posterior fossa through the mouth; injury to the cerebellum; meningitis* (Dr. W. Thyne's case).—A boy, aged five years, was standing on a snow heap holding a piece of gas piping which contained a steel umbrella rib projecting some inches. The steel rib was inserted into his mouth to imitate the bagpipes. He fell and caused the umbrella rib to penetrate the posterior wall of the pharynx. It was extracted by a bystander. There was slight oozing of blood and he appeared to recover. He was admitted to hospital the next evening with cerebral symptoms. There were convulsive movements of the right side of the face, conjugate deviation of the eyes to the left, unconsciousness, persistent vomiting, and a temperature varying from 104° to 107° F. Death took place 24 hours later. At the necropsy there was suppurative meningitis of the base, also laceration of the right cerebellar hemisphere adjacent to a fracture in the right posterior fossa external to the posterior condyloid foramen. A probe was easily passed through the puncture into the mouth. The umbrella rib had passed between the occiput and the transverse process of the atlas.

From a consideration of these cases it will be seen that the salient features of punctured fractures of the base are: (1) the frequency with which they are overlooked; (2) the not uncommon retention of a foreign body the presence of which is quite unsuspected; (3) the almost universal tendency to septic complications if the more immediate danger of death from intracranial hæmorrhage and cerebral injury is escaped; and (4) their fatal character.

1. *The frequency with which the true nature of these cases is overlooked.*—There is no fact that stands out so prominently as this. Hulke, writing in Holmes's "System of Surgery," says: "Two or three days may pass over during which the patient goes about as usual, then brain symptoms make their appearance, sometimes suddenly, and the patient dies in the course of a few hours or days and the true nature of the case is revealed only by the post-mortem examination." Recorded cases fully bear out this statement, and it may be regarded *as the rule*, unless the gravity of the external injury is too obvious to be overlooked, as in the case of Gage, or unless pronounced symptoms suggestive of intracranial hæmorrhage or of a gross lesion of the brain follow quickly on the injury.

In my first case it was particularly unfortunate that the value of Mr. Bailey's early recognition of the facts was nullified by the failure to confirm them at the infirmary. The occurrence was taken very much to heart and no doubt proved a valuable object lesson to those who were in residence at the time, and it is possible that its influence was reflected in the creditable observations which enabled the third case to be saved. The remarks of the coroner and the rider of the jury in Case 7 would at first sight appear perfectly fair and natural even to professional readers, but had the coroner's experience of these cases been more

[3] Medical Record, 1873, vol. xvi., p. 56.

[4] The illness was no doubt due to encephalitis, for at the end of ten days he lay in a semi-comatose condition for another ten days and hernia cerebri formed.

[5] American Journal of the Medical Sciences, vol. xx., 1850, p. 13.

[6] London Hospital Clinical Lectures and Reports, 1865, vol. ii., p. 246; also Hutchinson's Illustrations of Clinical Surgery.

extensive it is certain that he would have summed up very differently.

Now it is evident that there must be some circumstances, apart from professional carelessness or incompetency, to explain this frequent non-recognition of penetrating fractures of the base of the skull. Let us briefly consider four which are of much interest.

In the first place, there are the paths by which an offending instrument may reach the base. (*a*) The most usual is *through or across the orbit*. In six of the 11 cases I have described the weapon took this course. The orbit is not necessarily entered from the front, but may be crossed from below upwards or reached from inside the zygomatic arch, and the position of the skin wound may in some cases be such that it will fail to arouse suspicion. (*b*) A much less frequent one is through the mouth and pharynx or through the nose. The latter, however, must be very rarely taken, for I have not come across a single instance except as part of an orbital wound. (*c*) Another important and not uncommon route passes *inside the zygomatic arch*. The external wound is usually in the cheek and the lower jaw may be damaged. (*d*) Lastly, the convex portion of the base—viz., the posterior segment of the skull—may be wounded directly. It is in the cases that fall into the first three groups, or, in other words, where penetration takes place through the cavities and fossæ which lie anterior to the foramen magnum, that failure to recognise the nature of the injury is usual. And it is to one or other of these groups that the large majority of cases of punctured fracture of the base belong.

In the second place, appearances are often misleading, and it must be admitted that even in the simplest cases detection is far from easy if symptoms of intracranial injury are not present. It is obvious, after what has just been stated about the different ways of approach to the base, that *the superficial wound, which is usually trivial, must often be at a considerable distance from the opening in the skull, and it is in this fact that the great difficulty of making a correct diagnosis lies*. The wound on the surface and the hole in the bone are connected by a track which is apt to be bent at an angle in consequence of the gliding of moveable skin or to be more or less circuitous owing to the return to their original positions of structures pushed aside by the penetrating object. In other cases the track may lie in the soft, almost diffluent, fatty orbital tissue. But if the aperture of entrance should chance to be in the pharynx or the nose it may escape observation altogether even after careful examination.

A third cause of uncertainty or difficulty in diagnosis may be found in the lightning-like rapidity with which the wound may be inflicted and the weapon withdrawn. This difficulty is particularly apt to be present in the cases of wounds inflicted in fencing. But it is worth noting that the withdrawal is sometimes made in a moment of excitement by a bystander or even by the patient himself, and in either case accurate observations are not likely to be forthcoming.

Lastly, strange as it may seem, the wounds in a fair proportion of these cases are regarded by the patients as too trivial to worry about, so they are apt not to seek advice until the onset of serious symptoms makes a professional error unlikely.

These remarks apply more particularly to cases where the base is penetrated in front of the foramen magnum or reached from the front through one or other of the various cavities and fossæ. Punctured fractures of the base reached directly from the exterior in the posterior segment of the skull resemble in the main similar fractures of the vertex, except that the opening in the bone lies at a deeper level owing to the mass of muscles inserted into the occipital and mastoid bones. With ordinary care they are not likely to be overlooked and in most cases will probably be due to considerable violence. (Case 9.)

2. *Unsuspected retention of the foreign body.*—This, as you will have noticed, occurred in two instances in the 11 cases I have narrated (Nos. 1 and 7). They do not stand alone. Mr. Hulke records another in which, after a portion of slate pencil impacted in the frontal bone had been removed, another portion an inch long was found post mortem in an abscess in the right frontal lobe.[7] This is on all fours with Case 10, in which chips of wood were found within the skull after death, having escaped detection at an operation. And I have already referred to a case in which a portion of tobacco pipe was removed from the orbit, after a tardy onset of symptoms caused the patient to seek advice. The patient died and a piece of the pipe an inch long was found in the cavernous sinus, having reached that spot through the foramen lacerum anticum.[8]

In all these cases, as might be expected, the objects that caused the injuries were so brittle that they would snap under a slight degree of force. Moreover, they were long and slender. Had the retained portion not been slender it would seem impossible for it to have escaped attention. But a foreign body left behind is not always due to a fracture of a brittle weapon. A brass ferule has been found near the sella turcica in a man who died a few days after being struck on the side of the nose in a fencing bout with walking-sticks.[9] Now it is in these cases in which a fracture is produced *viâ* the orbit that a portion of the object that causes it is so apt to be left behind and overlooked. It is easy to understand how a foreign body such as a slate pencil may find a hiding place in that deepest cavity, but it is astonishing how large an object can lie in it and escape recognition. Ormonde[10] refers to a case recorded by Mr. C. Higgens, in which the blade of a penknife had been imbedded in the orbit and frontal sinus for 46 years without the patient having the slightest suspicion of its presence, and Treves[11] mentions an instance of a piece of an iron hat-peg, three inches long, being imbedded for several days without the patient being aware of it.

The difficulty of recognising the presence of a foreign body in the orbit would not be so great if the contents of that cavity were in their normal condition, but œdema, and possibly hæmorrhage into the loose cellular tissue, takes place so quickly after the injury that in a very short time a state of affairs is produced in which a deeply seated firm substance may only be capable of detection when the patient is anæsthetised. Great help would be given in these cases if a clear history of the facts could be obtained, but often this is not forthcoming or may fail to be rightly understood. One practical point, however, I would impress upon you: insist upon having the offending instrument brought for your inspection. You can then satisfy yourself as to the possible extent of penetration and recognise if there is any sign of a recent breakage.

3. *The tendency to septic complications if the more immediate danger of death from intracranial hæmorrhage and cerebral injury is escaped.*—I have not come across a single instance in which some complication of a very serious character was not present. The symptoms dependent upon the complications may occur immediately or may be deferred for several days. The former are usually the consequence of hæmorrhage or of laceration of the brain, the latter of septic inflammation. And the first, if not fatal, merge into the second. Now with reference to the question of hæmorrhage, let me remind you that it is at the base of the skull that the majority of the venous sinuses are situated, and at the central portion of the middle fossa the cavernous, the circular, and the petrosal sinuses are crowded into a small area. The large arteries and their chief branches are also snugly arranged in this neighbourhood. It is hardly necessary to enumerate the carotids and middle meningeal arteries outside the dura mater and within it the circle of Willis, with the anterior and middle cerebral arteries and the basilar and posterior cerebrals, for you to picture to yourselves how likely some of these vessels are to be injured when penetration takes place towards the centre of the middle fossa. And not only is this mid-region of the middle fossa packed with blood-vessels, but resting upon it and in close relation to it are some of the most important parts of the brain. It may be regarded, therefore, as *the most dangerous region* at the base in which a penetrating fracture can occur. Consequently it is distinctly unfortunate that owing to the shape of the orbits and the inward inclination of their outer walls a pointed weapon entering horizontally must almost inevitably be directed into this part of the skull.

Let me give you one instance in illustration. A man dropped down dead in a scuffle after receiving a penetrating wound of the orbit with the point of an umbrella. Considerable bleeding had taken place from the nose and mouth and it was subsequently found that much blood was effused into the membranes of the brain and that the brain and dura mater were lacerated. Penetration appears to have occurred close to the body of the sphenoid.[12]

[7] Holmes's System of Surgery, vol. i., p. 586.

[8] Mackenzie: Diseases of the Eye, p. 17.
[9] Holmes's System of Surgery, vol. i., p. 586.
[10] Guy's Hospital Gazette, Dec. 29th, 1906.
[11] Surgical Anatomy: Lawson's case.
[12] Mackenzie: Diseases of the Eye, p. 9, Case 16.

Then there is a point of very considerable interest in connexion with the wounds of the brain in these cases. Penetration for long distances is not uncommon. The brain on the table from Case 2 shows a track from base to vertex. In a wound of the left orbit related by Ruysch the stick had penetrated "to a considerable depth" into the brain. In another (Peter Borel) a sword entering the left orbit had penetrated to the cerebellum. In a third (Diemerbroeck) a sword thrust in the inner canthus of the eye traversed the corresponding lateral ventricle and almost passed through the skull at the upper angle of the lambdoidal suture. In still another an umbrella point injuring branches of the middle cerebral artery pierced the left crus, passed "into the right lateral ventricle, and must have penetrated the central parts of the brain to the depth of at least two inches."

But I have said enough. Let me pass to the later or septic complications. These are meningitis, encephalitis, and cerebral abscess, and if the "immediate" conditions, which I have just discussed, should be absent, or should fail to produce a rapidly fatal issue, one or more of them will inevitably supervene. There is no difficulty in understanding this. When the dura mater or the brain is penetrated septic organisms are carried directly to the intracranial contents, whether the wound is at the base or at the vertex. On the vault of the skull the injury is evident, it is surgically treated at once, and there is a reasonable probability that it is rendered aseptic. At the base, on the other hand, as we have seen, the real character of the injury is apt to be overlooked entirely and occasionally a septic foreign body may be allowed to remain imbedded.

In none of these cases is any attempt made to secure asepsis when it might avail. In others, though the nature of the injury may be appreciated, the position of the cranial wound may be such that surgical interference is practically impossible. And in still others the track to the brain and its meninges starts from a cavity swarming with bacteria. The very large majority of the recorded cases—in fact, nearly all—fall into one or other of these groups. But Case 3 shows that surgery can be useful and that even though a grave septic complication results it may in some cases be possible to guide it to a satisfactory issue.

Active surgery is not essential to success, as the remarkable recovery of Gage teaches us. And another very interesting case helps to enforce a similar lesson. Selwyn has recorded it. A cheese knife entered the right orbit of a boy, aged four years, for three and a half inches and was only withdrawn by considerable force. Brain matter protruded on withdrawal and more escaped on the eighth day, whilst vision was entirely lost in that eye. Recovery took place under simple treatment[13] and the lesson is—the value of a free opening for the swollen brain to protrude through and for inflammatory discharge to drain from.

4. *Their fatal character.*—This, the fourth salient feature of these fractures, does not call for much comment now, for almost every point that bears upon it has already been considered. From the historical point of view you may be interested to know that the injury in Gage's case was so remarkable and recovery considered so wonderful that Bigelowe thought it desirable—possibly for the benefit of his transatlantic cousins—to support his account of the case by the affidavits of eye-witnesses and others who could testify to its reality. The contrast between Gage's case and Selwyn's case of recovery on the one hand and the numerous fatal cases in which the injury was apparently so trivial as to be disregarded on the other cannot fail to impress you.

The number of cases of recovery are very few. I have given prominence to all I could find records of and as you see they are not numerous (Gage, Selwyn's, and Case 3). Morgagni refers to others by Borelli, Fantonus, Elias Camerarius, and Nebelius,[14] but I am unable to give you any particulars about them.

Lastly, a fracture which is very different in its causation from those which have furnished the subject matter of this lecture, but which belongs to the same type, is one of which two cases are mentioned by Mr. Hulke in Holmes's "System of Surgery." In this fracture the condyle of the lower jaw is driven forcibly through its fossa and projects into the skull. In one (Chassaignac's) the man died some months later with an abscess in the middle lobe of the brain against which the condyle was pressing. The other is a specimen in St. George's Hospital Museum.

[13] THE LANCET, vol. xxxiv., 1837-38, vol. ii., p. 16.
[14] Letter 51, Article 57, p. 121.

A Lecture
ON
SURGICAL AFTER-TREATMENT.

Delivered before the Lancaster Medical Book Club

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GENTLEMEN,—There is no doubt that this subject is an all-important one, both to the operating surgeon and to the general practitioner. A brilliant operation may have been performed but the after-treatment left in unskilful or inexperienced hands and an otherwise successful case turns out a miserable failure. Success in surgery, as well as in all other callings, depends on attention to detail. So a sin of aseptic omission or of septic commission may spoil an otherwise brilliant operative result. One cannot dogmatise in a discussion on after-treatment because, after all, it resolves itself into the ultimate and best results obtained in cases under the personal care of the individual surgeon. After-treatment is essentially a subject in which success depends a great deal on the surgeon's ego, tact, common sense, and consideration; his insight into his patient's character, nervous system, powers of endurance, and means of comfort; and, above all, on the surgeon's appreciation of human nature and weakness.

To come to the point: Take the case of a patient who has just undergone an abdominal operation. The patient should be kept flat on his back for two hours and then propped up a little. The dorsal position so often adopted is not natural and is often uncomfortable. Consider the badly covered bony parts and the risk of "acute decubitus." This position is said to be the cause of cystitis in women. Children should not be strapped down; bodily comfort means nervous and mental rest and quicker convalescence. The right lateral recumbent position is best for natural drainage, as in stomach and appendix cases, while the semi-recumbent dorsal position is good for artificial drainage.

The thirst should be quenched by frequently rinsing the mouth with hot or cold water, or thirst may be forestalled by a large saline enema or by leaving a considerable quantity of saline solution in the peritoneal cavity. After the anæsthetic vomiting is over give a liberal allowance of fluid by the mouth, including weak tea if desired.

Much of the pain present is due to spasm of the abdominal muscles; this can be relieved by relaxing the muscles by propping up the shoulders and flexing the knees over a pillow. Try to avoid giving morphine—rather give atropine, aspirin, or sulphonal. Remember that opium masks the symptoms of intestinal obstruction or peritonitis and may deceive both surgeon and patient in gauging the urgency of the case.

The diet for the first 48 hours is important. In most cases there is no need to rely on rectal feeding, though this is a useful adjunct, especially as a means of introducing fluid into the thirsty capillary system. A good nutrient enema is easily made by giving one fluid ounce of Carnrick's liquid peptonoids or panopepton in four fluid ounces of water. Milk should be more and more avoided both before and after operations; it is often not digested but forms a tough mass in the stomach and leaves a bulky residue in the intestines, causing a foul odour of breath and fæces by its lactic acid fermentation. Beef-tea also is an over-vaunted diet. The best beef-tea contains only 3½ per cent. proteins. The best foods after an operation of any severity are raisin-tea (for the glucose), albumin water (for the protein), and plasmon powder in hot water or in weak tea and broth. Ordinary fluid nourishment may be given as well, also fruit jellies and meat jellies and peptonised milk chocolate. If rectal feeding has to be persevered with the rectum must be washed out daily with warm boric lotion. Enemata often upset the patient by causing vomiting, rashes, and rises in temperature. If rectal feeding is going on regularly it is difficult to regulate the flatus tube which, if necessary, should be introduced half an hour before the nutrient. In some cases a fluid dietary sets up flatulence; if so, give semi-solid food such as Benger's, bread and milk, arrowroot, or Allenburys milk and cereal diet. If nutrients are not given leave a flatus tube in the rectum for from 24 to 48 hours after an abdominal or a perineal operation; it is a great comfort in preventing flatulence, meteorism, and perhaps peritonitis.

In passing a catheter after operations always wait 24 hours (as there is not much urine secreted at first) and then use, if possible, a boiled one of soft rubber and lubricated with sterilised olive oil. In nearly all cases the bowels should be opened on the third day preferably by a simple enema preceded if desirable by an olive-oil injection especially in rectal cases. Five grains of calomel may be given on the evening of the second day as a rule. Enemata act without much peristalsis, which is not always an unmixed blessing, as peristalsis is beneficial, especially after appendix operations and abdominal uterine operations. A little rise in temperature the first two days is usually reactionary and means nothing serious; the more pronounced the shock of the operation the longer the reactionary temperature takes to appear and disappear. Usually if the pulse keeps below 100 the patient is doing well and there is no danger of peritonitis.

Where drainage by gauze wick, split rubber tubing and gauze together, or glass or rubber tubing has been instituted remove the gauze in 48 hours and shorten the tube a little. If necessary re-introduce fresh gauze (boiled) either by the side of, or inside, the tube. The advantage of the split rubber tube is the facility with which gauze can be placed inside it either *in situ* or *ex loco*. Glass or rubber tubes should not communicate directly with the outer air but must be covered by some antiseptic gauze. All drainage appliances must be adequately secured outside the body. Where drainage is only established for a short time a skin suture is often left ready to be tightened up when the tube is removed. In every case where the dressing is "through" if it is not changed throughout it must be re-packed with sterilised wool and re-bandaged with a sterilised bandage. Bottles or jars into which fluids drain from wounds through tubes should either be air-proof or contain some antiseptic solution.

Three weeks in bed is the usual period of rest after a laparotomy, but in some cases of hernia sutured with strong material and in some appendicectomies done by the "gridiron" operation patients may get up in from 10 to 14 days. Sutures should not be removed early unless causing irritation, and in all cases must be removed with sterilised instruments. With the forceps draw up one side of the suture so as to bring to light a buried portion of it and snip this through; by this means in withdrawing the suture you run less risk of infecting the deeper tissues. If there is a "stitch abscess" to deal with it is better simply to cut the suture and leave it until the wound has been purified in case of infecting deeper tissues. Strapping is most useful after a laparotomy and is usually applied over the gauze and wool dressing; over the strapping are usually placed more sterilised wool and a many-tailed bandage. In dressing the case afterwards all that is necessary is to cut the strapping obliquely and then to fasten it again with safety-pins; the extra support which strapping affords is of value in securing primary and firm union. When the patient is allowed up a well-fitting belt with a pneumatic pad to fit the scar is usually worn for six months.

Surgical shock has, if possible, to be prevented by judicious ante-operative treatment, such as rest and warmth in bed before the operation, a warm operating table and room, and the avoidance of noise, confusion, and display. The patient should be covered, so far as is convenient for the operator, with a Gamgee suit. The patient's system must not be drained of fluid by starvation and purgation. He may have a preliminary hypodermic injection of digitaline or strychnine or an enema of black coffee or of saline solution and brandy. These stimulants are useful in averting shock but practically useless in combating it. During the operation the anæsthetist is largely responsible in averting shock by the method he employs to save cardiac strain and pulmonary engorgement and pain. The surgeon is responsible by reason of his dexterity and control of hæmorrhage. In quite recent times the employment of cold mackintoshes and wet carbolic towels has added to the risk of surgical shock.

The main factor in shock is the fall in general blood pressure. The tachycardia is not so much due to a failing heart muscle as to its having not enough blood to work on. Shock is due to exhaustion and breakdown of the vaso-motor centre; the blood collects into the splanchnic area and the patient bleeds into his own veins, so to speak. Neurotic shock is seen in patients whose nervous centres are exhausted by pain, malnutrition, and disappointment; they make up their minds to die and often succeed. Secondary shock is seen in debilitated and emaciated people; they have dry fauces, pinched features, sunken eyeballs, cold and blue extremities, a small quick pulse, and scanty urine. There are congestion of the gastric mucous membrane and coffee-ground vomiting; this is attributed by some to sepsis, but the real cause is the draining away of fluid from the tissues. The treatment of neurotic shock is by morphine. The treatment of immediate and secondary shock is by giving the heart something to act on, and this is done by subcutaneous or venous infusion of saline solution into the patient's system. Subcutaneous infusion is safer but takes a little longer to take effect. Venous infusion may cause pulmonary œdema or thrombosis. Fluid may also be given by the rectum and when possible by the mouth. The foot end of the bed must be raised and the patient's legs bandaged. Hot-water bottles must also be used but not to such an extent as to overdo the reaction and make the patient perspire too freely. Infusion with saline solution and adrenalin (1 in 20,000) is useful, for the adrenalin is a vaso-constrictor and therefore raises the blood pressure. If possible use oxygen with the saline treatment, as the hæmoglobin is so diluted that it wants oxygen to make more oxyhæmoglobin.

Meteorism is often preventable by using the flatus tube from the first. Distension can be detected without disturbing the dressings, or at most by simply undoing the many-tailed bandage. When detected give one grain of calomel every hour and a saline purge, or as an alternative a turpentine enema and leave in the flatus tube. A very good pill containing extract of belladonna, salol, and nux vomica increases peristalsis and so may be given with advantage. Once the intestine becomes distended with gas it becomes paralysed; then the medical attendant must look out for the quick thready pulse and give strychnine early. If other purges and enemata fail try a large enema of glycerine.

Peritonitis requires prompt treatment, such as a high turpentine enema, calomel and saline purges. Pay more attention to the pulse and less to the temperature when on the look out for peritonitis; if the pulse is under 100 the fear of this complication is usually groundless. As the toxæmia deepens the pain gets less and the surgeon must not be misled by this—the temperature also drops, which is again a deception to the unwary. If the peritonitis does not yield to the treatment mentioned an immediate second operation may be necessary under some local anæsthetic; two large tubes must then be put in and irrigation employed. In addition to this pints of saline solution may be allowed to gravitate into the subcutaneous tissues from a douche tin and free purgation kept up so as to flush the patient's system with saline solution. The more perfect the technique of the surgeon the less will he see of peritonitis after abdominal sections.

With regard to vomiting, anæsthetic vomiting is often due to an ether gastritis and is aggravated by previous frothiness, cyanosis, and strain on the right heart. The linen bag with Clover's inhaler to some extent lessens salivation and frothiness and is always cleaner than the rubber bag. Proper dieting before the operation is essential and gastric lavage before and after operation is useful in averting vomiting. While vomiting is going on the patient must lie in the right lateral recumbent position. For persistent vomiting gastric lavage is the best treatment, or 20 grains of sodium bicarbonate in a tumblerful of water or three minims of tincture of iodine in a tumblerful of water may be given. Sips of iced champagne have also been found useful. For persistent hiccough try tongue traction or pressure on the phrenic nerve and perhaps a mustard leaf on the epigastrium. For the causes of regurgitant vomiting after gastro-enterostomy reference should be made to Moynihan's work on the stomach. If lavage, posture, and purgatives fail to relieve it an entero-anastomosis may have to be done and rectal feeding persisted in.

Post-operative hæmatemesis usually occurs during the first 48 hours, but may come on as late as the tenth day. It is usually seen after operations on the stomach, duodenum, and bile passages, especially in jaundiced cases, for here the blood seems to have lost its power of coagulation. The various causes are given in any work on abdominal surgery and are at present ill-understood. The treatment consists of gastric lavage with sodium bicarbonate or adrenalin. Calomel should be given frequently in small doses; also high rectal injections of hot water. To prevent this awkward and serious complication calcium chloride should be given in jaundiced and hæmophilic cases in large doses two or three days before operation.

Parotitis can in great measure be prevented by attention to oral asepsis. Stenson's duct is the most exposed one, hence the parotid gland is the one most frequently attacked. Depriving the patient of fluid is another cause of parotitis. The treatment is mainly palliative with attention to any septic focus. Glyco-thymoline or listerine are useful mouth washes.

Phlebitis and thrombosis after operations are caused by sepsis, anæmia, and pressure on the calves of the legs. It is more usually seen after pelvic operations, for the clot extends into the pelvic, iliac, and saphenous veins. The treatment is mainly palliative with lead and opium lotion, elevation of the limb, and the avoidance of pressure, movement, or rubbing.

Chest complications are more frequent after operations on the upper abdomen, for then the rigid lower intercostal and upper abdominal muscles allow an accumulation of bronchial secretion. The prolonged Trendelenburg position is bad in this respect. Other conducive agencies are cold and exposure, a dirty inhaler and rubber bag, and oral sepsis. The treatment is to prop the patient up, give ammonium carbonate freely, and use a steam kettle containing some Friar's balsam; also cover the patient's chest in a pneumonia jacket.

Post-operative mania and neurasthenia must be treated symptomatically and tactfully. Local suppuration may occur in any wound, say, for instance, a breast case in which there has been inefficient hæmostasis or drainage—a thrombus has formed and broken down. Here stitches have to be sacrificed and boric fomentations applied and good drainage substituted. If the wound is very dirty chlorinated soda solution or hydrogen peroxide is useful in cleansing it. In deep stitch suppuration if the suture is of unabsorbable material it must be removed or troublesome sinuses may persist for months.

The question of adhesions forming after abdominal operations is a most important one and must be borne in mind when vague pains still worry the patient months after the operation. This is often seen after appendicectomy and hysterectomy. The rational treatment in these cases is to get the bowels open early and to keep them open so as to stir up peristalsis. The position of the patient must be frequently changed so as to stretch any bands while they are yet thin and elastic. If this does not answer, the bands must be divided and, if possible, only peritoneal surfaces apposed to each other. If unrelieved, these bands may cause either acute or chronic obstruction.

Fæcal fistula is often seen after suppurative appendicitis and some hernia cases. The fistula should in most cases be left alone and it will close spontaneously within six months. Acute dilatation of the stomach is recognised by inspection and palpation and the patient's discomfort and irregular respiration. The symptoms are sickness, a small quick pulse, dyspnœa, and syncope. It may be due to pyloric spasm and hyperchlorhydria, atony either nervous or toxic, the dorsal position, and a too sloppy dietary. The treatment consists of lavage, calomel in small and frequent doses, and rectal feeding. Give alkalies.

The following are a few brief notes on certain operations. In some cases of colostomy the bowel will have to be opened after 48 hours—this must be done with asepsis, of course; trim up the redundant mucous membrane, and snip off any appendices epiploicæ if this has not already been done; the wound is then dressed with oiled silk or eucalyptus ointment spread on gauze. A wise precaution is to seal off the skin incision with "new skin" or collodion. The lower and stagnant part of the bowel should be flushed through or syringed out with boric solution so as to keep the bacillus coli in hand. Remember it is the atony of long-continued obstruction which causes the mortality of colostomy, not the operation.

In hernia cases get the bowels open early and so prevent adhesions. Scrotal hæmatocele is avoided by careful ligation, good drainage, and raising the scrotum. In using drainage-tubes about the scrotum do not forget the aseptic safety-pin, or these tubes may disappear and cause trouble and annoyance. Collodion and gauze is a useful dressing, especially in children. Vomiting coming on a week after the operation is either due to sloughing of an omental stump or to adhesions between it and the intestine.

In breast cases leave the arm free and use a many-tailed bandage. Nearly always leave a tube in for 24 hours and change the dressing as soon as it is "through." Dust the axilla well with boric acid.

In gall-bladder cases use cellulose wadding as the best absorbent for the bile from the fistula. A rubber drain is usually fastened to the gall-bladder by catgut sutures and will come away in eight days. Conduct all the bile into an air-tight glass vessel or into an antiseptic solution. After the tube is removed the skin may get sore from the digestive action of the bile on it; therefore wash the skin daily and dust it well with boric powder or smear it with hazeline ointment. The lumbar drainage-tube is removed in from 36 to 48 hours and a gauze drain substituted for a few days. If gauze is used in the anterior incision instead of or as well as a tube it is well to wait from 48 to 72 hours before gently withdrawing it, as it may be packed down on to an incision in the common bile-duct. Look out for hæmorrhage in all jaundiced cases and give calcium chloride before and after operation. The leakage sometimes seen after duodeno-choledochotomy is due to sutures near the ampulla of Vater having been prematurely digested by the pancreatic juice.

After operations on the urinary bladder give salol or boric acid. If the incision is suprapubic wash out the bladder thoroughly through a catheter per urethram and a tube per abdomen. The urine should be syphoned off and not allowed to escape into the dressings. Here, again, cellulose wadding is the best absorbent if syphonage cannot be thoroughly carried out. For hæmorrhage use liquid extract of hamamelis as an injection. After rectal operations eucalyptus ointment spread on iodoform or cyanide gauze is a good dressing for packing. If an enema has to be given after a rectal case give a cocaine suppository first, also an olive oil injection. For rectal hæmorrhage pass a catheter as flatus tube and then pack round it with a captive sponge. A morphine and belladonna suppository will often help the patient to micturate after a rectal operation; a purge is also useful, for the centres of the bladder and the rectum are close together in the spinal cord so when one works the other often follows suit. If there is difficulty in keeping a drainage-tube in any wound or organ affected by position or respiration anchor the tube to the skin by a silkworm-gut suture. After operations for suppurative appendicitis or other local peritoneal abscess when the initial gauze packing and tube have been removed do not syringe the wound but gently swab it clean and pour in boric powder. In knee-joint operations do not hesitate to sacrifice a stitch if there is tension or you may induce suppuration. In fracture of the patella never fix the knee-joint but begin passive and active movements very early. If the bone has been well wired the patient should be walking with sticks in a fortnight. In circumcisions never use strapping; just plenty of boric ointment on lint, with wool and a napkin. If the dressing sticks let the patient sit in a warm bath. After a few days carefully manipulate and coax the retracted skin on to the glans penis. In tongue cases rectal or nasal feeding is often necessary. Medicated steam kettles should be kept going and strict oral asepsis carried out. In dressing cases boiling water can always be got and should be used. Sterilise all instruments, dressings, and re-introduced tubes.

PHYSIOLOGICAL AND PATHOLOGICAL OBSERVATIONS ON WRIGHT'S METHOD OF TESTING THE BLOOD AND URINE,

WITH SPECIAL REFERENCE TO THE CONCENTRATION OF THE SERUM AND URINE (EXPRESSED IN TERMS OF NaCl) AND THE EXCRETORY QUOTIENT IN NATIVES OF BENGAL.

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IN THE LANCET of April 2nd, 1904, Sir A. E. Wright and Dr. J. N. Kilner published a paper on a New Method of Testing the Blood and the Urine, with special reference to the Determination of the Excretory Efficiency of the Kidney, and in THE LANCET of Oct. 21st, 1905, another paper of absorbing interest appeared under the joint authorship of Sir A. E. Wright and Dr. G. W. Ross. This paper dealt more particularly with the discrimination of "physiological albuminuria" from the albuminuria caused by renal disease.

In the first of these papers the authors showed by this new

method of testing the blood and urine that in health a relationship between the concentration of the serum and the urine exists of such a nature that the excretory quotient is never represented by a figure less than two but always by two or over. The second paper—which introduced a much simpler method of carrying out the test—was devoted to demonstrating by means of the excretory quotient test that in physiological albuminuria the kidneys are not organically impaired and are able to elaborate from the blood a concentrated saline solution.

Briefly, the test is as follows. In a capillary tube a measured volume of blood is mixed with two volumes of a diluted standard solution of NaCl; different dilutions $\frac{N}{30}$ $\frac{N}{35}$ $\frac{N}{40}$, &c., are made use of until the particular dilution is found that just exactly causes hydrolysis of the red blood corpuscles. Thus, for example, two volumes of a $\frac{N}{35}$ NaCl solution cause hæmolysis of one volume of blood—i.e., two volumes of a 0·167 per cent. NaCl solution cause hæmolysis of one volume of blood. Similarly the urine is taken (certain precautions in its collection being observed) and is diluted with distilled water four-, six-, eight-, &c., fold until it is again found that two volumes of the diluted urine when mixed with one volume of the blood just causes hæmolysis—i.e.,

Two volumes of $\frac{U}{12}$ cause hæmolysis of one volume of blood.

Therefore $\frac{U}{12} = \frac{N}{35} = 0{\cdot}167$ per cent. NaCl.

Therefore, urine = 2·004 per cent. NaCl = hæmosmic value of the urine—i.e., the urine contains the equivalent of 2·004 per cent. NaCl.

Again, the serum of the blood is examined in exactly the same way and its concentration in terms of NaCl is estimated as, for example:—

Two volumes of $\frac{\text{serum}}{6}$ cause hæmolysis of one volume of blood.

Therefore $\frac{S}{6} = \frac{U}{12} = \frac{N}{35} = 0{\cdot}167$ per cent. NaCl.

Therefore serum = 1·002 per cent. NaCl = hæmosmic value of the serum—i.e., the serum contains the equivalent of 1·002 per cent. NaCl.

The excretory quotient is obtained by dividing the minimum dilution of the urine that causes complete hæmolysis by the minimum dilution of the serum that causes complete hæmolysis; in the example this would be—

$$\frac{\text{Urine}}{\text{Serum}} = \frac{12}{6} = 2 \text{ (excretory quotient).}$$

In healthy Europeans in England this excretory quotient never falls below the figure 2, whereas in conditions of impairment of the renal function it falls to well below 2, usually 1 or under.

In the second paper mentioned above Wright and Ross showed that in physiological albuminuria the excretory quotient conformed to the standard obtained in health, in other words, that in physiological albuminuria the kidney is able to elaborate from the blood a concentrated saline solution, whereas in albuminuria depending on organic disease of the kidney it is unable to do so.

From the result of investigations on metabolism that have been going on for some time in the Physiological Laboratory, Medical College, Calcutta, it was evident that some modification of this test would be necessary when applied to natives of Bengal, and for this reason a series of observations was undertaken to obtain the data for the Bengali. Healthy students attending the department were examined. The method as devised by Wright was rigidly observed, so that the results might be as far as possible comparable. Besides the concentration of the serum and urine and excretory quotient a few other observations were made in each instance—viz., the blood pressure, the freezing point of the urine, and the chlorides in the urine—as is shown in Table I.

A large number of students were examined, of which the above tabulated results of 25 may be taken as typical examples, and we may conclude that the averages obtained do not depart far from the normal standards for natives of Bengal. All these observations were taken practically under the same conditions regarding weather, time of day, and interval after food and drink; the urine was collected during the process and the blood pressure was examined by the same instrument (Riva Rocci's), each student being placed

TABLE I.

No.	Solution of diluted normal NaCl causing hæmolysis.	Blood pressure in mm. Hg.	Hæmosmic value of serum in terms of NaCl.	Hæmosmic value of urine in terms of NaCl.	Freezing point.	Chlorides.	Excretory quotient.
			Per cent.	Per cent.	°C.	Per cent.	
1	$\frac{N}{37{\cdot}5}$	109	0·936	1·69	− 1·42	1·67	1·18
2	$\frac{N}{47{\cdot}5}$	105	1·84	1·84	− 1·49	1·13	1·00
3	$\frac{N}{45}$	115	1·02	1·16	− 0·97	1·1	1·14
4	$\frac{N}{40}$	98	1·02	1·16	− 2·03	1·08	1·14
5	$\frac{N}{40}$	100	0·87	0·87	− 0·87	0·83	1·00
6	$\frac{N}{45}$	115	1·04	1·75	− 1·80	1·72	1·68
7	$\frac{N}{52{\cdot}5}$	105	1·33	1·66	− 1·47	1·34	1·25
8	$\frac{N}{35}$	109	1·33	1·33	− 1·40	1·20	1·
9	$\frac{N}{50}$	88	1·75	1·63	− 1·43	1·37	0·93
10	$\frac{N}{40}$	102	1·27	1·75	− 1·24	1·70	1·32
11	$\frac{N}{40}$	105	0·87	1·16	− 0·89	0·97	1·33
12	$\frac{N}{40}$	114	1·02	1·16	− 0·85	0·92	1·14
13	$\frac{N}{42{\cdot}5}$	97	1·23	1·37	− 1·50	1·42	1·11
14	$\frac{N}{40}$	114	1·02	1·16	− 1·16	1·14	1·14
15	$\frac{N}{35}$	110	1·33	1·33	− 1·17	1·24	1·00
16	$\frac{N}{45}$	108	0·910	0·910	− 0·90	0·87	1·00
17	$\frac{N}{40}$	100	1·02	1·02	− 0·93	0·78	1·00
18	$\frac{N}{45}$	98	1·04	1·04	− 0·75	0·65	1·00
19	$\frac{N}{43{\cdot}75}$	107	1·06	1·33	− 1·30	1·20	1·25
20	$\frac{N}{47{\cdot}5}$	103	0·98	1·47	− 1·38	1·31	1·50
21	$\frac{N}{57{\cdot}5}$	95	1·01	1·42	− 1·14	1·22	1·40
22	$\frac{N}{65}$	83	2·07	2·69	− 1·94	20·1	1·25
23	$\frac{N}{45}$	93	1·04	1·04	− 1·48	1·03	1·00
24	$\frac{N}{52{\cdot}5}$	97	0·89	1·33	− 1·57	1·50	1·50
25	$\frac{N}{52{\cdot}5}$	98	0·779	0·89	− 0·90	0·81	1·14

in exactly the same position. In every instance also each particular observation, such as the freezing point of the urine, the chlorides, &c., was made by the same observer and in the same manner. An analysis of the results works out as follows:—

1. *Caste, age, condition, &c.*—All were healthy Hindus of Lower Bengal, their age varying between 20 and 25 years.

2. *Blood pressure.*—Riva Rocci's sphygmomanometer with Recklinghausen's broad armlet on the brachial artery—taking the reading at the disappearance of the pulse at the wrist—was the method employed. The pressure over a very large number of observations varied between 83 mm. Hg and 118 mm. Hg, the average being slightly over 100 mm. Hg (sitting position, arm level with heart). This is much lower than the blood pressure laid down for Europeans in European (colder) countries.

3. *The degree of dilution of standard solution of NaCl* necessary in order to cause complete hæmolysis of the red

blood corpuscles is greater than Wright obtained in England. $\frac{N}{35}$ is about the average which he lays down, whereas it will be seen $\frac{N}{45}$ is much nearer the true figure for natives of Bengal.

4. *The hæmosozic value of the serum*—i.e., the minimum dilution of the serum that causes complete hæmolysis multiplied by the percentage of the salt content equivalent of the blood. In the present series results practically identical with those published by Wright were obtained, so that we may take it that the serum in Europeans in England and the serum in natives of Bengal is practically the same—at least, so far as this method of investigation shows.

5. *The hæmosozic value of the urine*—i.e., the minimum dilution of the urine that causes complete hæmolysis of the red blood corpuscles multiplied by the salt content equivalent of the blood. This hæmosozic value of the urine was found to give very different results from those obtained in England. In Wright's published cases the hæmosozic value of the urine varied between 1·80 and 3·90 per cent. (expressed in terms of NaCl), while in natives of Bengal it varied between 0·87 and 2·69 per cent. NaCl, the average being much lower than in Europeans.

6. *The chlorides in the urine.*—As will be seen from Table I. there is a very close relationship between the amount of chlorides estimated chemically and the hæmosozic value of the urine expressed in percentage of NaCl. The average quantity of chlorides present in the urine by chemical analysis worked out to be 1·21 per cent., while the average hæmosozic value (in terms of NaCl) was 1·31 per cent. It will be evident that this amount (1·21 per cent.) of chlorides is lower than that obtained in Europeans.

7. *The excretory quotient*—i.e.:

$$\frac{\text{The hæmosozic value of the urine}}{\text{The hæmosozic value of the serum.}}$$

This differs very markedly from the results obtained by Wright. In the present series it varied between 0·93 and 1·68 compared with 2, or over 2, as seen in England. In natives of Bengal the figure representing the excretory quotient may be taken as normally about 1·20; it would therefore appear—as the hæmosozic value of the serum varies little from that of Europeans—that the urine of natives of Bengal requires much less dilution in order to cause hæmolysis than the urine of Europeans, and from this it would follow that the urine in natives of Bengal has a lower salt concentration than the urine in Europeans. This is sufficiently evident from a consideration of (*a*) the average quantity of chlorides; (*b*) the average freezing point; and (*c*) the average specific gravity, all of which are on a much lower grade than is the case normally in the urines of Europeans. This point has a distinct bearing on von Koranyi's criterion of renal competency—viz., whether the kidney is, or is not, competent to elaborate out of the blood a concentrated saline solution. Regarding this there will be fuller evidence when the pathological application of these results is dealt with.

8. *The freezing point of the urine.*—From an analysis of some hundreds of observations on the urine of healthy students it was found that the freezing point varies directly with the specific gravity. In the present series it varied between −81° and −2·23° C., but it very rarely was so low as −1·65° C., quite the common reading to find being −1° C. (about).

The quotient[1] $\frac{\Delta}{\text{NaCl per cent.}}$ representing the ratio of the total concentration to the sodium chloride in Europeans varies within relatively narrow limits in health, diet according to von Koranyi having practically no influence. In Europeans $\frac{\Delta}{\text{NaCl per cent.}}$ variations lie between 1·23 and 1·69, while in natives of India they lay between 0·72 and 1·78, very much wider limits than laid down for Europeans. In fact, in natives the quotient $\frac{\Delta}{\text{NaCl per cent.}}$ very nearly approaches unity, being just over or just under 1.

This investigation was undertaken with a view to obtain some idea of the condition of the blood and urine that normally is present in natives of Bengal. The following conclusions have been arrived at: 1. The excretory quotient in natives of Lower Bengal averages about 1·20 compared with 2 or more for Europeans. 2. The average blood pressure in the brachial artery is about 104 mm. Hg compared with 120 mm. Hg in Europeans. 3. The specific gravity and freezing-point differ widely from that obtained in Europeans, being much lower. 4. The total salts in the urine are low and the power of the kidney to elaborate out of the blood a concentrated saline solution would appear to be much less than in Europeans.

PATHOLOGICAL APPLICATION IN NATIVES OF BENGAL.

Wright, accepting von Koranyi's criterion of renal competency—the power of elaborating out of the blood a concentrated saline solution—was led to the conclusion from his results that by the excretory quotient test he was able to differentiate between conditions in which the functional activity of the kidney is impaired and those in which it is intact, even when there is albumin present in the urine; also that in the excretory quotient test we had obtained a trustworthy criterion of the competence or incompetence of the kidney. From the results obtained in pathological conditions in natives of Bengal a somewhat different conclusion has been arrived at. First with regard to the excretory quotient test in kidney disease the results obtained confirm those published by Wright as shown in Table II.

TABLE II.

No.	Blood pressure in mm. Hg.	Hæmosozic value of serum.	Hæmosozic value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	°C.	Per cent.		
1	135	0·89	0·43	—	—	0·50	European. No œdema or ascites; anæmia present; albuminuria 1·3 per cent.
2	135	2·032	1·016	—	0·93	0·50	Well-marked Bright's disease; œdema and ascites present; albuminuria.
3	103	0·849	0·636	—	0·81	0·75	Slight œdema and albuminuria. Blood: Hb = 58 per cent.; r.b.c. = 3,370,000.
,,	104	0·935	0·467	−0·71	0·68	0·50	
4	108	2·12	0·53	−0·92	0·38	0·25	Well-marked Bright's disease; albuminuria, œdema, &c. Blood: Hb = 42 per cent.; r.b.c. = 4,500,000.
5	100	4·26	1·16	−0·97	—	0·25	Œdema, ascites, albuminuria. Blood: Hb = 46 per cent. and 40 per cent.; r.b.c. = 2,100,000 and 2,400,000.
,,	95	3·42	0·806	−0·82	0·54	0·23	

Hb = hæmoglobin; r.b.c. = red blood corpuscles.

Secondly, two cases of physiological albuminuria gave results exactly corresponding with those obtained in the normal series and fully agreeing with Wright's conclusions as shown in Table III.:—

TABLE III.

No.	Blood pressure in mm. Hg.	Hæmosozic value of serum.	Hæmosozic value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	° C.	Per cent.		
1	87	0·81	0·935	−1·35	—	1·14	Albuminuria under the slight [illegible] have [illegible] albumin
2	112	0·83	0·83	−0·91	0·78	1·00	Albumin C

The second of these cases had be

[1] The letter Δ is usually employed to express the freezing point which is a measure of the total concentration of the solids in solution.

method of testing the blood and urine that in health a relationship between the concentration of the serum and the urine exists of such a nature that the excretory quotient is never represented by a figure less than two but always by two or over. The second paper—which introduced a much simpler method of carrying out the test—was devoted to demonstrating by means of the excretory quotient test that in physiological albuminuria the kidneys are not organically impaired and are able to elaborate from the blood a concentrated saline solution.

Briefly, the test is as follows. In a capillary tube a measured volume of blood is mixed with two volumes of a diluted standard solution of NaCl; different dilutions $\frac{N}{30}$ $\frac{N}{35}$ $\frac{N}{40}$, &c., are made use of until the particular dilution is found that just exactly causes hydrolysis of the red blood corpuscles. Thus, for example, two volumes of a $\frac{N}{35}$ NaCl solution cause hæmolysis of one volume of blood—i.e., two volumes of a 0·167 per cent. NaCl solution cause hæmolysis of one volume of blood. Similarly the urine is taken (certain precautions in its collection being observed) and is diluted with distilled water four-, six-, eight-, &c., fold until it is again found that two volumes of the diluted urine when mixed with one volume of the blood just causes hæmolysis—i.e.,

Two volumes of $\frac{U}{12}$ cause hæmolysis of one volume of blood.

Therefore $\frac{U}{12} = \frac{N}{35}$ = 0·167 per cent. NaCl.

Therefore, urine = 2·004 per cent. NaCl = hæmocoxic value of the urine—i.e., the urine contains the equivalent of 2·004 per cent. NaCl.

Again, the serum of the blood is examined in exactly the same way and its concentration in terms of NaCl is estimated as, for example:—

Two volumes of $\frac{\text{serum}}{6}$ cause hæmolysis of one volume of blood.

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The excretory quotient is obtained by dividing the minimum dilution of the urine that causes complete hæmolysis by the minimum dilution of the serum that causes complete hæmolysis; in the example this would be—

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TABLE I.

No.	Solution of diluted normal NaCl causing hæmolysis.	Blood pressure in mm. Hg.	Hæmocoxic value of serum in terms of NaCl.	Hæmocoxic value of urine in terms of NaCl.	Freezing point.	Chlorides.	Excretory quotient.
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1	$\frac{N}{37·5}$	109	0·936	1·09	– 1·62	1·07	1·18
2	$\frac{N}{47·5}$	105	1·84	1·84	– 1·49	1·13	1·00
3	$\frac{N}{40}$	115	1·02	1·18	– 0·97	1·1	1·14
4	$\frac{N}{40}$	98	1·02	1·16	– 2·03	1·08	1·14
5	$\frac{N}{40}$	100	0·87	0·87	– 0·87	0·83	1·00
6	$\frac{N}{45}$	115	1·04	1·75	– 1·80	1·72	1·68
7	$\frac{N}{58·5}$	105	1·33	1·66	– 1·47	1·34	1·25
8	$\frac{N}{35}$	109	1·33	1·33	– 1·40	1·20	1·
9	$\frac{N}{60}$	88	1·75	1·63	– 1·43	1·37	0·93
10	$\frac{N}{40}$	102	1·27	1·75	– 1·24	1·70	1·32
11	$\frac{N}{45}$	105	0·87	1·16	– 0·89	0·97	1·23
12	$\frac{N}{40}$	114	1·02	1·16	– 0·85	0·92	1·14
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15	$\frac{N}{35}$	110	1·33	1·33	– 1·17	1·24	1·00
16	$\frac{N}{45}$	106	0·910	0·910	– 0·90	0·87	1·00
17	$\frac{N}{40}$	100	1·02	1·02	– 0·93	0·78	1·00
18	$\frac{N}{45}$	98	1·04	1·04	– 0·75	0·65	1·00
19	$\frac{N}{43·75}$	107	1·06	1·33	– 1·30	1·30	1·25
20	$\frac{N}{47·5}$	103	0·98	1·47	– 1·38	1·31	1·50
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22	$\frac{N}{65}$	83	2·07	2·69	– 1·94	20·1	1·25
23	$\frac{N}{45}$	93	1·04	1·04	– 1·48	1·03	1·00
24	$\frac{N}{52·5}$	97	0·89	1·33	– 1·57	1·50	1·50
25	$\frac{N}{52·5}$	98	0·779	0·89	– 0·90	0·81	1·14

1. *Caste, age, condition, &c.*—All were healthy Hindus of Lower Bengal, their age varying between 20 and 25 years.

2. *Blood pressure.*—Riva Rocci's sphygmomanometer with Recklinghausen's broad armlet on the brachial artery—taking the reading at the disappearance of the pulse at the wrist—was the method employed. The pressure over a very large number of observations varied between 83 mm. Hg and 118 mm. Hg, the average being slightly over 100 mm. Hg (sitting position, arm level with heart). This is much lower than the blood pressure laid down for Europeans in European (colder) countries.

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blood corpuscles is greater than Wright obtained in England. $\frac{N}{35}$ is about the average which he lays down, whereas it will be seen $\frac{N}{45}$ is much nearer the true figure for natives of Bengal.

4. *The hæmosozic value of the serum*—i.e., the minimum dilution of the serum that causes complete hæmolysis multiplied by the percentage of the salt content equivalent of the blood. In the present series results practically identical with those published by Wright were obtained, so that we may take it that the serum in Europeans in England and the serum in natives of Bengal is practically the same—at least, so far as this method of investigation shows.

5. *The hæmosozic value of the urine*—i.e., the minimum dilution of the urine that causes complete hæmolysis of the red blood corpuscles multiplied by the salt content equivalent of the blood. This hæmosozic value of the urine was found to give very different results from those obtained in England. In Wright's published cases the hæmosozic value of the urine varied between 1·80 and 3·90 per cent. (expressed in terms of NaCl), while in natives of Bengal it varied between 0·87 and 2·69 per cent. NaCl, the average being much lower than in Europeans.

6. *The chlorides in the urine.*—As will be seen from Table I. there is a very close relationship between the amount of chlorides estimated chemically and the hæmosozic value of the urine expressed in percentage of NaCl. The average quantity of chlorides present in the urine by chemical analysis worked out to be 1·21 per cent., while the average hæmosozic value (in terms of NaCl) was 1·31 per cent. It will be evident that this amount (1·21 per cent.) of chlorides is lower than that obtained in Europeans.

7. *The excretory quotient*—i.e.:

$$\frac{\text{The hæmosozic value of the urine}}{\text{The hæmosozic value of the serum.}}$$

This differs very markedly from the results obtained by Wright. In the present series it varied between 0·93 and 1·68 compared with 2, or over 2, as seen in England. In natives of Bengal the figure representing the excretory quotient may be taken as normally about 1·20; it would therefore appear—as the hæmosozic value of the serum varies little from that of Europeans—that the urine of natives of Bengal requires much less dilution in order to cause hæmolysis than the urine of Europeans, and from this it would follow that the urine in natives of Bengal has a lower salt concentration than the urine in Europeans. This is sufficiently evident from a consideration of (*a*) the average quantity of chlorides; (*b*) the average freezing point; and (*c*) the average specific gravity, all of which are on a much lower grade than is the case normally in the urines of Europeans. This point has a distinct bearing on von Koranyi's criterion of renal competency—viz., whether the kidney is, or is not, competent to elaborate out of the blood a concentrated saline solution. Regarding this there will be fuller evidence when the pathological application of these results is dealt with.

8. *The freezing point of the urine.*—From an analysis of some hundreds of observations on the urine of healthy students it was found that the freezing point varies directly with the specific gravity. In the present series it varied between −·81° and −2·23° C., but it very rarely was so low as −1·65° C., quite the common reading to find being −1° C. (about).

The quotient[1] $\frac{\Delta}{\text{NaCl per cent.}}$ representing the ratio of the total concentration to the sodium chloride in Europeans varies within relatively narrow limits in health, diet according to von Koranyi having practically no influence. In Europeans $\frac{\Delta}{\text{NaCl per cent.}}$ variations lie between 1·23 and 1·69, while in natives of India they lay between 0·72 and 1·78, very much wider limits than laid down for Europeans. In fact, in natives the quotient $\frac{\Delta}{\text{NaCl per cent.}}$ very nearly approaches unity, being just over or just under 1.

This investigation was undertaken with a view to obtain some idea of the condition of the blood and urine that normally is present in natives of Bengal. The following conclusions have been arrived at: 1. The excretory quotient in natives of Lower Bengal averages about 1·20 compared with 2 or more for Europeans. 2. The average blood pressure in the brachial artery is about 104 mm. Hg compared with 120 mm. Hg in Europeans. 3. The specific gravity and freezing-point differ widely from that obtained in Europeans, being much lower. 4. The total salts in the urine are low and the power of the kidney to elaborate out of the blood a concentrated saline solution would appear to be much less than in Europeans.

[1] The letter Δ is usually employed to express the freezing point which is a measure of the total concentration of the solids in solution.

PATHOLOGICAL APPLICATION IN NATIVES OF BENGAL.

Wright, accepting von Koranyi's criterion of renal competency—the power of elaborating out of the blood a concentrated saline solution—was led to the conclusion from his results that by the excretory quotient test he was able to differentiate between conditions in which the functional activity of the kidney is impaired and those in which it is intact, even when there is albumin present in the urine; also that in the excretory quotient test we had obtained a trustworthy criterion of the competence or incompetence of the kidney. From the results obtained in pathological conditions in natives of Bengal a somewhat different conclusion has been arrived at. First with regard to the excretory quotient test in kidney disease the results obtained confirm those published by Wright as shown in Table II.

TABLE II.

No.	Blood pressure in mm. Hg.	Hæmosozic value of serum.	Hæmosozic value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	°C.	Per cent.		
1	125	0·89	0·43	—	—	0·50	European. No œdema or ascites; anæmia present; albuminuria 1·3 per cent.
2	135	2·032	1·016	—	0·93	0·80	Well-marked Bright's disease; œdema and ascites present; albuminuria.
3	103	0·849	0·636	—	0·81	0·75	Slight œdema and albuminuria. Blood: Hb = 58 per cent.; r.b.c. = 3,370,000.
,,	104	0·935	0·467	−0·71	0·68	0·50	
4	108	2·12	0·53	−0·92	0·38	0·25	Well-marked Bright's disease; albuminuria, œdema, &c. Blood: Hb = 42 per cent.; r.b.c. = 4,500,000.
5	100	4·26	1·16	−0·97	—	0·25	Œdema, ascites, albuminuria. Blood: Hb = 46 per cent. and 40 per cent.; r.b.c. = 2,100,000 and 2,400,000.
,,	96	3·42	0·926	−0·82	0·54	0·23	

Hb = hæmoglobin; r.b.c. = red blood corpuscles.

Secondly, two cases of physiological albuminuria gave results exactly corresponding with those obtained in the normal series and fully agreeing with Wright's conclusions as shown in Table III.:—

TABLE III.

No.	Blood pressure in mm. Hg.	Hæmosozic value of serum.	Hæmosozic value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	° C.	Per cent.		
1	87	0·81	0·935	−1·35	—	1·14	Albuminuria disappeared under treatment; had slight fever which may have accounted for the albumin.
2	112	0·83	0·83	−0·91	0·76	1·00	Albuminuria disappeared under treatment with $CaCl_2$ and rest.

The second of these cases had been looked on as a kidney

case until his excretory quotient was tested. He was discharged from hospital cured.

Thirdly, it has been found that the same low excretory quotient is obtained in certain of the secondary anæmias—such as ankylostomiasis—as in kidney disease, as shown in Table IV.

TABLE IV.

No.	Blood pressure in mm. Hg.	Hæmocoagulable value of serum.	Hæmocoagulable value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	°C.	Per cent.		
1*	95	2·12	0·74	—	0·38	0·35	No albuminuria; œdema and ascites well marked and getting worse; very anæmic. Hb = 24 per cent.; r.b.c. = 2,080,000; normoblasts present.
,,	96	6·09	1·21	−1·25	1·03	0·20	
2	96	3·95	1·23	−1·33	1·12	0·41	No albuminuria; œdema and ascites present; anæmia. Hb = 21 per cent.; r.b.c. = 2,100,000.
,,	88	1·52	1·30	−1·69	1·23	0·85	Improved; no albuminuria; no ascites, only a trace of œdema. Blood: Hb = 24 per cent.; r.b.c. = 2,500,000. Ankylostomiasis present.
3	122	1·72	0·934	—	0·73	0·60	No albuminuria; œdema and ascites present; anæmia. Blood: Hb = 48 per cent.; r.b.c. = 4,600,000.
,,	115	2·32	0·67	—	0·40	0·30	Patient worse; more œdema and more ascites. Blood: Hb = 44 per cent.; r.b.c. = 3,200,000. This was a case of ankylostomiasis.
4	88	0·847	0·47	−1·25	0·95	0·56	No albuminuria; no œdema or ascites; diarrhœa. Blood: Hb = 22 per cent.; r.b.c. = 1,350,000.

* Post-mortem examination of this case showed ankylostomiasis with the presence of intestinal ulcers to be the cause of death. There was no disease of the kidneys.

Fourthly, the low value for the excretory quotient is not obtained in cases showing œdema and ascites due to some cause other than anæmia, as shown in Table V.

TABLE V.

No.	Blood pressure in mm. Hg.	Hæmocoagulable value of serum.	Hæmocoagulable value of urine.	Freezing point.	Chlorides.	Excretory quotient.	Remarks.
		Per cent.	Per cent.	°C.	Per cent.		
*1	107	1·022	1·164	−1·30	0·75	1·13	Very marked œdema and ascites; no albuminuria; no anæmia. Blood: Hb = 97 per cent.; r.b.c. = 5,000,000.
,,	105	1·022	1·168	−1·18	0·81	1·14	Œdema slightly diminished. Blood: Hb = 87 per cent.; r.b.c. = 4,670,000. P.M.: probable cause of death, wet form of beri-beri.

* The examination of this case would tend to show that œdema, &c., may be due to other causes than the retention within the tissues of the salts of the blood. In this particular instance the most probable explanation was the condition of the peripheral nerves.

From an analysis of the results shown in Table IV. it will be evident that, to explain the low excretory quotient present in cases of secondary anæmias in which the kidneys are healthy, some cause other than renal incompetency must be looked for. The published cases bearing on this point afford little information of value. In Wright's series[1] the serum is shown to be modified in the same characteristic manner as is seen in Table IV., but only in two instances was the value of the excretory quotient estimated. His results in pernicious anæmia and chlorosis would point to a greater degree of serum concentration in these diseases such as occurs in secondary anæmia and in the œdema of nephritis. Therefore, in pernicious anæmia and chlorosis we should expect to find the same low excretory quotient that is seen in the other conditions mentioned.

Upon this question the work done by Dr. T. Houston[2] throws considerable light. He shows that, in the œdema of renal disease, in chlorosis, in splenic anæmia, and in pernicious anæmia there is an abnormal accumulation of fluid in the blood and tissues and that the œdema of anæmic conditions results from a hydræmic plethora of the blood. Professor J. Lorrain Smith,[4] from investigations on the total volume of the blood in the different forms of anæmia, came to the conclusions that the anæmia of chlorosis is due to an increase in the plasma of the blood, the total hæmoglobin remaining normal in amount, whilst in pernicious anæmia the volume of the plasma may be reduced or increased. Professor Smith states: "The condition (chlorosis) may be described as consisting in a great increase in the plasma of the blood, the apparent loss of hæmoglobin being due almost entirely to the increase in the plasma." He also lays stress on the fact, noted by several observers, that the specific gravity of the plasma in chlorosis is the same as that of normal blood; this, it will be evident, has a very important bearing on the cause of the increase in the amount of plasma—viz., its increased salt concentration from retention of the chlorides. Further, it is well known clinically that one of the first signs of improvement in these anæmias is a loss of body-weight usually due to a great increase in the fluid excretions. There is ample proof that retention of chlorides involves a retention of water with an accompanying increase in body-weight, which increase will closely correspond to the theoretical amount necessary to give a dilution of about 0·55 per cent. of chlorides.[5] Taking all these different facts in combination with the work done on the salt interchanges of the body, it would appear that in the different forms of anæmia and in renal disease there is an increased salt concentration of the serum (salt retention) involving a retention of fluid within the tissues; this would equally explain the increase in body-weight, the hydræmia and increased volume of the blood, the œdema and anasarca which is such a common feature and, at the same time, it would explain the results obtained by the excretory quotient test in the anæmias examined in Table IV.

Now the question arises, What is the cause of this retention of chlorides and increased salt concentration of the serum? Widal, who was the first to work on this subject, ascribed the condition to "renal impermeability" to chlorides. This view would lay the fault with the excretory function of the renal epithelium and would therefore be on a par with von Koranyi's criterion of renal competency—the power of elaborating from the blood a concentrated saline solution; but "renal impermeability" due to kidney disease will not explain the retention of chlorides in anæmia where the renal function is not impaired and where, when improvement begins, the elimination of the chlorides may set in suddenly, the increased salt concentration of the serum disappearing rapidly and along with it the œdema, ascites, &c. In pneumonia and in other febrile diseases there is retention of the chlorides. Hutchinson has shown that the tissues in these diseases contain chlorides in excess although the kidneys are perfectly healthy. From this and other evidence it seems probable that a retention of the chlorides occurs quite independently of the kidney, and that, therefore, Widal's term "renal impermeability" is not a true explanation of the condition. Forster has given a purely physical explanation of the phenomenon. He believes that crystalloids in the blood may exist in two states: a small part free and able to pass through the glomerular epithelium and a larger part in combination with colloid and unable to pass through the glomerulus. The increased salt concentration of the serum in nephritis and anæmia could easily be explained on this theory by the supposition that in these conditions there was an increase in the salt-combining colloid material present in the tissues.

It might be suggested, therefore, that the high degree of concentration of the serum in nephritis or, at least, in

[1] THE LANCET, April 2nd, 1904, p. 921.

[2] The Œdema of Anæmia, Brit. Med. Jour., June 14th, 1902.

[4] The Volume and Oxygen Capacity of the Blood in Anæmia, Transactions of the Pathological Society of London, vol. li., Part iii.

[5] Bainbridge: Practitioner, vol. lxxvii., No. 6.

anæmia may be due to some change in the condition of the blood—such as loss of hæmoglobin, diminution in the number of the red blood corpuscles or both combined—that so affects the relationship between the salt retained in combination with colloid and the salt free to be eliminated that a much larger proportion of the salt is retained than in normal circumstances. This view would exonerate the kidneys from blame and lay the fault on the condition of the blood. What evidence is there in favour of this view? In the first place, it is a remarkable fact that it is in the chronic parenchymatous form of nephritis that the salt retention and low excretory quotient are best seen, and it is in this form also that the anæmia of Bright's disease is well marked. Then from an analysis of the results of observations in anæmic conditions due to different causes the concentration of the serum varies directly with the amount of œdema present and with the degree of anæmia, as shown in Table VI.

TABLE VI.

Date.	No.	Concentration of serum.	Concentration of urine.	Excretory quotient.	Remarks.	Blood.
		Per cent.	Per cent.			
13/3/07	1	4·26	1·16	0·25	Albuminuria; marked œdema and ascites.	Hb = 46 per cent.; r.b.c. = 2,100,000.
18/3/07	,,	2·84	1·42	0·50	Œdema and ascites much less.	Hb = 40 per cent.; r.b.c. = 2,400,000.
21/2/07	2	2·12	0·74	0·35	No albuminuria, œdema and ascites present.	—
26/2/07	,,	6·09	1·21	0·20	Œdema and ascites much worse.	Hb = 24 per cent.; r.b.c. = 2,080,000.
6/3/07	3	3·95	1·23	0·41	No albuminuria, œdema and ascites present.	Hb = 21 per cent.; r.b.c. = 2,100,000.
17/4/07	,,	1·52	1·30	0·85	No œdema; no ascites.	Hb = 24 per cent.; r.b.c. = 2,700,000.
8/3/07	4	0·24	0·63	0·75	Albuminuria; slight œdema.	Hb = 58 per cent.; r.b.c. = 3,370,000.
16/3/07	,,	0·935	0·46	0·50	Œdema better marked; urine scanty.	Hb = 56 per cent.; r.b.c. = 3,450,000.
6/3/07	5	2·12	0·54	0·25	Well marked Bright's disease; œdema and ascites.	Hb = 42 per cent.; r.b.c. = 4,500,000.

These results contrast very markedly with those shown in Table V., in which, even with general œdema and ascites but no anæmia, the concentration of the serum and excretory quotient conformed to the normal. Of course, a much larger number of observations will be necessary before any definite conclusion can be arrived at, but all our evidence would seem to point to the fact that the degree of concentration of the serum determines the degree of œdema, and that there is some relationship between the œdema and the amount of anæmia. This appears to be true equally for secondary anæmias (probably also all anæmias) and the anæmia of Bright's disease.

It would, therefore, follow that the excretory quotient test, being a measure of the salt concentration of the serum compared with the salt concentration of the urine, does not depend on the presence or absence of kidney disease, whereby the kidney is unable to eliminate the chlorides, but does depend on some condition of the blood or tissues by which chlorides are retained in the system. What the determining factor in this retention is at present it is not possible to say; it would appear at least to have some relationship to the presence and degree of anæmia, but whether due to destruction of corpuscles, loss of hæmoglobin, or some other factor must remain for the present an open question.

Methods of investigation.—When dealing with blood containing a low percentage of hæmoglobin a modification of Wright's method had to be adopted, as in these cases the colour changes on dilution differ so slightly that precision could not be attained. The translucency of hæmolysed blood was taken advantage of and the point where hæmolysis occurred was determined by the ease with which a black dot on a white ground could be seen through blood that had been hæmolysed compared with the non-translucency of even very diluted blood that had not undergone hæmolysis.

In each observation the blood examination was carried out by an independent worker, Assistant-Surgeon L. M. Ghosal, L.M.S.; also the amount of chlorides present in the urine was determined by another assistant, Assistant-Surgeon M. M. Dutta, L.M.S., to both of whom I offer my best thanks for much assistance.

For permission to examine the different patients I am indebted to Colonel C. P. Lukis, I.M.S., principal; and Colonel G. F. A. Harris, I.M.S., Captain J. W. D. Megaw, I.M.S., and Captain M. MacKelvie, I.M.S., physicians of the Medical College Hospital, Calcutta. Last, though not least in degree, my thanks are due to the students of the physiological classes for providing the means of determining the physiological standards on which the whole value of the paper rests.

Calcutta.

CASE OF MULTILOCULAR OVARIAN CYST SUCCESSFULLY REMOVED FROM AN INFANT AGED 11 MONTHS.

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THE following case seems to possess some points of interest, in fact to be perhaps unique in certain respects, and therefore deserves to be recorded.

Towards the end of January of this year an infant was sent to my wards in the Royal Infirmary, Edinburgh, as a case of tuberculous peritonitis requiring surgical interference. The mother, a woman aged 35 years, gave the following history. When she was about 20 years of age she married and had one child, a boy, who died. She was afterwards left a widow, but subsequently she again married and had five consecutive miscarriages, at periods varying from four to seven months. No syphilitic history could be made out. Finally, at the commencement of February, 1906, she was safely delivered, at full term, of a healthy female child who was entirely brought up on the breast. The child throve well until she was three months old. The mother then noticed that the abdomen was hard and full, and that the infant seemed to suffer pain and discomfort, and was occasionally sick and troubled with diarrhœa. From this time onward the abdomen rapidly increased in size, while the child wasted. She grew peevish and took nourishment badly, had increasing difficulty in breathing, and the former symptoms of digestive disturbance got steadily worse. The mother finally sought medical advice, and the child was sent to the Infirmary with the diagnosis previously mentioned.

On admission the child was found to be an ill-nourished and emaciated infant, with cyanosed lips and face, rapid pulse, difficult breathing, and some sickness and diarrhœa. The abdomen was enormously distended, the lower ribs were projecting, the parietes were thinned and showing numerous large distended veins, and the navel was projecting. The whole abdomen was of drum-like hardness, so that nothing could be felt of its contents. There was absolute dulness on percussion, except in the left flank, where there was a tympanitic area. Slight, varying areas of tympanites could be made out on light percussion to the right of the umbilicus. The dulness extended up to the right nipple, and a circumscribed area of tympanites was to be made out below the left nipple. About a tablespoonful of clear yellow fluid was drawn off by means of a hypodermic syringe from the right flank and half a teacupful of similar fluid from the left of the umbilicus. The fluid did not flow easily; on moving the needle in different directions it seemed to penetrate separate cavities. The distension being slightly relieved, the surface of the underlying structures appeared to be irregular and nodular. No more definite diagnosis could be made than that the abdomen, from the diaphragm to the pelvis, was filled by a mass containing separate cavities filled with fluid, and that the greater part of the intestines lay in the left flank with a single coil passing upwards to the right of the umbilicus.

Two days later the child was chloroformed in a warm theatre and an exploratory incision was made a little to

the left of the middle line below the umbilicus. The abdominal cavity being opened a small quantity of ascitic fluid escaped and the nodular wall of a large cyst was seen. This was punctured, but as the cavity proved to be multilocular only small quantities of fluid escaped and no appreciable diminution in size resulted. Passing the finger into the cyst and trying to break down the septa gave no better result, but the cyst seemed to be nowhere firmly adherent to the abdominal parietes. The child was now very much collapsed, but, as it was evident that death would result if nothing more were done, the incision was rapidly extended upwards to within two inches of the ensiform cartilage. On the front of the multilocular cyst, to the right of the umbilicus, there was now to be seen the cæcum with the appendix, and the ascending colon lying empty, attached to the front of the cyst and stretched over it. The cyst was therefore evidently retroperitoneal. Avoiding these structures the posterior layer of peritoneum was torn through and stripped off the cyst, which was then rapidly turned out. There were found three points of attachment to the posterior abdominal wall—one below the liver, one about the level of the umbilicus, and a third near the brim of the pelvis to the right side. These were made up of large veins and arteries which, after being seized with forceps, were divided, the tumour was removed, and the points of attachment were ligatured. The child was now pulseless, and the breathing for the moment was imperceptible from shock. On artificial respiration being had recourse to the breathing, however, rapidly improved, the chest being now able to expand, and the pulse improved. The abdomen was dried out and hot saline solution was introduced. The state of the child did not allow of any prolonged investigation as to the condition of the pelvic or other organs and the long incision, some eight inches in extent, was rapidly sutured with a continuous suture, sterile wool and a firm bandage being applied as dressing. The infant was put to bed in a collapsed condition and was surrounded by hot bottles. More or less collapse continued throughout the night, the child refusing milk but taking minute doses of whisky with avidity. The next day the child took the breast and never thereafter had a bad symptom. The wound healed by first intention and the suture was removed at the end of ten days, the walls of the abdomen being supported by means of broad strips of adhesive plaster, cotton-wool, and a firm bandage.

The tumour was found to be a curious double multilocular cyst, the two halves being nearly equal in size and attached by their fibrous walls the one to the other by loose connective tissue. Its length on removal was about 10 to 11 inches and its thickness about four to five inches. It filled up the whole distended abdominal cavity from the diaphragm to the true pelvis, and from its size it came to be a question whether the cyst was removed from the child or the child from the cyst.

The pathological report, kindly supplied me by Mr. Henry Wade, the conservator of the museum of the Royal College of Surgeons of Edinburgh and assistant pathologist to the infirmary, is as follows:—

Report on specimen.—Tissue consists of a stroma of young connective-tissue cells, forming young fibrous tissue. These surround spaces which have an epithelial lining which is flattened out in some, absent in others, and in others is seen to be undergoing a mucoid degeneration. Multiple cystic ovarian tumour.

On consulting the literature, I find that perhaps the most complete and full *résumé* of the subject of such tumours in children is that by Dr. Howard Kelly, of Baltimore, in the fifth volume of Keating's "Cyclopædia of the Diseases of Children," being a supplement published in 1901. Bland-Sutton also in his "Surgical Diseases of the Ovaries" goes pretty fully into the subject. There are also numerous individual cases reported in the medical journals.

De Sinety in 1875 was one of the first to call attention to the relative frequency of cystic ovaries in children. The investigations of Kissel in 1891 showed these to be mostly of the nature of cystic follicles, and pointed out that they were rare after the first year and were not to be confounded with adenocystomata, which make up a large proportion of the ovarian tumours of later childhood. In 1876 Professor C. Hening published an important treatise on the "Diseases of the Genital Organs in Children," and alluded to ovarian disease in childhood. In 1888 Alban Doran reported the occurrence of congenital double ovarian tumours in a seven months fœtus which only survived its birth a few minutes.

Bland-Sutton in his article on Ovarian Tumours in Infancy and Childhood reports 100 cases of ovariotomy in children under the age of 16 years, and gives statistics as to the mortality of the operation.

Howard Kelly, in his instructive article previously referred to, classifies ovarian tumours in children into cystic and solid—the former comprising the adenocystomata, the unilocular cysts and the dermoids and teratomata; the latter, the sarcomata and the carcinomata—and he specially points out that, in the case of children under three years, most ovarian tumours are either dermoids or sarcomata. After that age the large proportion, in fact one-half of all the cases of ovarian disease in childhood which have been reported, proved to be adenocystomata with a few monocysts. Dermoids and teratomata, he points out, are usually small or medium in size, or affect only one loculus of an adenocystoma. As to the question of differential diagnosis this is always difficult, cystic kidney, sacculated peritoneal exudation, hepatic and hydatid cysts being the conditions most likely to be mistaken for ovarian tumours. Retroperitoneal disease is not so likely to lead to difficulty, being generally a fixed sarcomatous tumour with a broad base springing from the pelvis. The most interesting part of Howard Kelly's article, however, is a very full list of operations for ovarian disease performed in children. From this one sees that under the age of four years the mortality has been 50 per cent. uninfluenced by the nature of the tumour. In older children the prognosis is good, though here, of course, the nature of the tumour is of importance. The list comprises 126 cases. Of these, 55 were cysts, multilocular or unilocular, with four deaths; 47 were dermoids, with ten deaths; of solid tumours there were 24, with eight deaths. Of the cysts, the youngest patient is one described by D'Arcy Power in 1898. The age was four months, the cyst was large but unilocular, with a long, thin pedicle, and the little patient made a good recovery. The next four mentioned are one by Alcock in 1871, a multilocular cyst with adhesions, in a little girl of three years. Death followed the operation. Another by Boldt in 1888, a suppurating cyst in a little girl of four years, a fatal result ensuing; a third fatal case by Boer of New York, in a child of four years; and, finally, Schwartz removed an adenocystoma from a child of four years with a good result. With one exception, in the case of a girl of nine years, all the other 51 patients recovered, they being all children over four years of age.

From the foregoing it will be seen that the case here recorded presents various points of interest. 1. The age of the patient at the time of operation was 11 months, the tumour having been first noticed at the third month. D'Arcy Power's case is therefore the only younger case recorded, the patient being four months old at the time of operation; but in his case the cyst was unilocular, with a long pedicle, and was easily removed through a small incision. 2. The enormous size of the tumour and the fact that though it formed one mass it was in reality made up of two multilocular cysts with flattened sides attached the one to the other by loose connective tissue, thus raising the question of its being a double ovarian cyst; the state of the child at the time of the operation prevented investigations being made as to the presence or state of the other ovary. 3. The retroperitoneal position of the tumour, as shown by the appendix, cæcum, and ascending colon lying in front of it and stretched over its surface, and the fact that the posterior layer of the peritoneum had to be torn through in order to enucleate the tumour. As Kelly states, such a position points to the tumour being sarcomatous and directly contra-indicates an ovarian origin. 4. The uneventful recovery of so young a child from such a severe operation.

Edinburgh.

A FURTHER NOTE ON RINNE'S TEST.

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IN the preliminary note on Rinné's test which I contributed to THE LANCET[1] six primary divisions into which I suggested that Rinné's test should be subdivided were given; perhaps the whole intention was not sufficiently clear. The subdivision was not done with the idea that other means of subdividing the test would not be found, perhaps more easily applicable than those I suggested, and the reading of Dr. D. M. Mackay's letter,[2] referring to the means adopted

[1] THE LANCET, Feb. 23rd, 1907, p. 505.
[2] THE LANCET, April 13th, 1907, p. 1040.

by Professor Politzer of diagrammatically expressing the variations which might occur, has much interested me. For purposes of comparison I think, however, they will prove themselves very suitable. It is my belief that the terms "negative" and "positive" are themselves somewhat confusing, as there is no guide to enable the casual employer of these tests to remember accurately or definitely what is negative and what is positive Rinné. There are not wanting evidences to show that we are gradually tending more and more towards a re-classification of diseases of the middle ear. We are coming more and more to regard obstruction of the Eustachian tube, with its resulting conditions of adhesive processes, hypertrophic thickenings, and fixation of the ossicles (short of bony ankylosis), as primarily the same disease, its varying symptoms being due to relative intensity of, and its subjective symptoms especially due to extension inwards of, the same pathological condition.

Rinné α.—This subdivision includes all cases in which the bone conduction is normal, and in it the acoumeter is diminished while the voice is heard relatively well. The acoumeter is diminished in proportion to the loss of air conduction; the whisper is much reduced, but tuning forks are heard through the whole scale. Such cases are due to Eustachian obstruction, combined in the graver instances, as shown by increased loss of air conduction, with a certain amount of middle-ear disease. The completeness of the loss of the whisper, with a normal bone conduction, is, I believe, against the disease being one of primary nerve lesion. In rare circumstances one will find also examples of otosclerosis coming under this and the next headings, cases which stand midway between the increased and diminished bone conduction groups of this disease.

Rinné β, in which bone conduction is normal, air conduction absent, with a Rinné negative, appears to me to be a rare condition in which some gross lesion of the internal ear has occurred, but in which at least the middle part of the cochlear terminal division of the auditory nerve has escaped complete destruction.

Rinné γ, with bone conduction increased, air conduction normal, and a Rinné positive result, will yield cases of which the greater proportion will be early cases of otosclerosis having a plus bone conduction, though it is also possible that subacute inflammations of the middle ear may at times give this result, if the inflammation is confined largely to the region of the promontory. The latter condition, however, does not appear to be equally frequent with the former.

Under *Rinné* δ we have a large group of cases in which will be found a certain proportion yielding a positive result, though the majority will be Rinné negative. In these, the greater the increase in bone conduction the greater proportionately will usually be the loss in air conduction. The acoumeter will be diminished, the whisper generally almost lost, and the voice diminished, all in proportion to the loss of air conduction, and there will also be a loss of one or more octaves in the bass. In some instances the whole of the bass will be lost and at times the highest octave in the treble, whilst paracusis Willisii is a frequent symptom. Thus Rinné δ is pathognomonic of otosclerosis without further testing, in that form probably in which there are patches of rarefying osteitis in the labyrinthine capsule, fixation of the stapes in the oval window in these cases being indicated by a higher grade loss of air conduction.

Rinné ε.—In these cases the bone conduction is reduced, whilst the air conduction remains normal, the voice is but slightly interfered with, and there is but little interference with the tuning forks as heard by the air—that is to say, that although there may be general diminution, yet they are all heard, but the whisper is reduced, together with the acoumeter, the reduction in both being practically equal. As these conditions are rarely complained of or come before the aurist until the loss in bone conduction is at least ten seconds, I consider that they should be classed as early nerve lesions.

Rinné ζ.—These cases will, as I suggested in my preliminary note, like the δ group, be found to consist of cases yielding sometimes positive and sometimes negative results. The great majority of the slight cases is due to Eustachian obstruction with a negative reaction, with pronounced involvement of the middle ear, and I consider that, as a regular rule or hypothesis, one may assume that when the loss of bone conduction is over ten seconds a nerve lesion has become definitely established, as is also probably the case when the result is positive and the loss of bone conduction is less than ten seconds. The remaining cases present in this group are those of otosclerosis in which the bone conduction is minus. In other words, we have in this last group cases showing early involvement of the nerve elements secondary to middle-ear affections or obstruction of the Eustachian tube, many cases in which the nerve cannot be proved to be definitely involved, together with a large group of grave cases of otosclerosis.

Cases may present themselves, occurring chiefly under the ζ, and sometimes under the α, which belong to an entirely different category from any of those which we have seen and to which I have alluded elsewhere.[1] I refer to that class of cases in which neurasthenia has exerted a considerable influence. Group ζ may be extended so far that air conduction is entirely absent. These will be cases of gross nerve lesions. In the same way, under δ, one can find cases in which the air conduction is also entirely lost, the most advanced stage of that description of otosclerosis, cases of long-standing and in elderly people.

Having now thus far expressed my views as to the conditions which occur in the various subdivisions, it is quite evident that without a careful record as to the relative proportions of loss or increase in the bone conduction to the air conduction, Rinné's test alone is of small value, and that the advances which have been made in the instruments we have for testing hearing and the increase in our knowledge necessitated a further subdivision of the test, and its definite alteration into a proportional test. It is also shown, I think, that the more one devotes oneself to the study of these problems the more conclusively one can state the conditions present; but it seems to me it must be admitted that it demonstrates with equal clearness the need for a further test for differentiating between early nerve cases and slight affections of the middle-ear consequent upon or following Eustachian obstruction. Pathological research, combined with accurate estimation of the hearing powers, will no doubt shed light on some of the more abstruse questions but until these investigations have been made, and their results digested and assimilated, hypothesis must frequently take the place of fact.

Harley-street, W.

"CONGENITAL PILES."

NOTES ON THREE CASES IN WHICH A PILE-LIKE CONDITION WAS NOTICED FROM BIRTH.

BY F. VICTOR MILWARD, M.B., B.C. CANTAB., F.R.C.S. ENG.,

SURGEON TO OUT-PATIENTS, CHILDREN'S HOSPITAL, BIRMINGHAM.

SINCE both external and internal hæmorrhoids are very rarely seen in young infants it appears to me to be worth while to place on record three cases of a pile-like condition which I have observed within the last 18 months in my out-patient practice at the Children's Hospital, Birmingham. These children were from 11 weeks to four months and the trouble was in each case stated by the mother to have existed from birth. I have seen also a fourth case in a child, aged two years, but as its similarity to the other three cases is somewhat doubtful I am not describing it here.

Although the disease is a trivial one, consisting of a single pile-like tumour of about the size of a large pea in the exact mid-line at the anterior margin of the anus, I am nevertheless inclined to think that we have here something of the nature of a congenital malformation rather than an outgrowth originating in a dilated venous radicle. The tumour occupies a situation on the perineum, encroaching on the anal canal, but in no way situated within it as is to some extent an external hæmorrhoid. I have seen one case of a thrombosed external hæmorrhoid in a child, aged three months, but it in no way resembled these cases, while the cutaneous tabs left by external hæmorrhoids are generally numerous and situated nearer the anal passage than the cases I am now describing. When snipped away with scissors very little bleeding results and the growth is seen to consist of fibro-fatty tissue. In one case ulceration was present and had destroyed a considerable portion of the growth. In the other two cases there was no ulceration or œdema and no fissure was present in the anal passage in any case. There were no signs of syphilis or malignant disease in any of the cases. In one case the anus was definitely narrowed, scarcely admitting the little finger, a fact supporting the congenital theory.

[1] West London Medico-Chirurgical Journal, 1906.

CASE 1.—The patient was a male child, aged 11 weeks. There was a tumour of the size of a large pea, soft in structure and not inflamed, situated at the anterior margin of the anus, its posterior margin being flush with the anal canal. The latter was slightly narrower than normal, and I dilated it with the finger. The mother stated that the little lump had been present since birth and was giving the child pain. It was removed with scissors.

CASE 2.—The patient was a female, aged four months. The tumour was situated in the same place as in Case 1 and was of about the same size. It was partially destroyed by ulceration and was somewhat indurated for the same reason. No stricture of the anus was present. The growth was snipped off.

CASE 3.—The patient was a female, aged 11 weeks. The pile was in the same place and was of about the same size as in the other two cases. Its structure was perfectly healthy and consisted of fibrous and adipose tissue. It was snipped off, as the mother complained of the pain which it was causing the child. I put this down entirely to her imagination, as there seemed no reason for painful symptoms to be present.

I think these cases deserve some distinctive title because they appear to me to be unlike any pile or anal tumour which I have seen described in text-books on rectal or general surgery. The tumour is single, median, exists from birth, is composed of quite healthy tissue, unless secondarily inflamed, and is not associated with any other morbid condition which might have produced it. The term "hæmorrhoid" is hardly suitable if it has not originated in a blood-vessel but it might well be designated the "congenital pile," since, as far as I am aware, no such condition has been hitherto described.

Birmingham.

A CASE OF TUBAL PREGNANCY ASSOCIATED WITH OVARIAN CYST.

BY E. G. EMERSON ARNOLD, M.B., B.S. DURH., M.R.C.P. LOND.,

COLONIAL MEDICAL SERVICE, FIJI; FORMERLY SENIOR OBSTETRIC HOUSE PHYSICIAN, ST. THOMAS'S HOSPITAL, AND REGISTRAR TO THE HOSPITAL FOR WOMEN, SOHO, LONDON.

So long as the etiology of ectopic gestation remains obscure and the influence on its production which other morbid conditions of the pelvic organs may exert is undetermined, it seems desirable to place on record any example of the condition which presents at all uncommon features. This consideration prompts me to report the following case, to the recital of which some added interest and some excuse for its shortcomings may also, perhaps, attach from the fact that it is a record of work carried out under many disadvantages in a remote part of the world.

The patient was a European woman, aged 27 years, and had been married for six years. She had had no children but there had been one pregnancy some four to five years ago which resulted in an abortion at the third to fourth month. After that she suffered from symptoms suggestic of pelvic trouble and was twice curetted in a hospital in Sydney. I first saw her in August, 1905, when she consulted me for pain in the back and left iliac region and for irregular menstruation. On bimanual examination at that time I found that the uterus was normal as to size and position but with its mobility slightly impaired, and movement of it by the examining finger applied to the cervix caused some pain. The right appendages appeared to be normal. The Fallopian tube could be rolled between the fingers and felt of natural size, while the ovary could be well defined and showed no enlargement. On the left side the ovary lay rather low and was slightly tender, though not apparently enlarged, but the tube felt thicker than normal and its palpation elicited pain. A diagnosis of chronic salpingitis of the left side was made and rest, hot douches, and other palliative measures were advised, as neither general nor local conditions seemed to warrant operative interference. The symptoms subsided under this régime and after a few months the patient ceased to regard herself as an invalid, though I impressed upon her the necessity for care as to chill and fatigue and at the menstrual periods.

I did not see the patient again until April 15th, 1906, when I received an urgent summons. On arrival I found that whilst dancing on the previous evening she had been very suddenly seized with acute pain in the left iliac region and had fainted. She had been put to bed and hot fomentations applied by her husband, when the pain soon ceased and she fell asleep. She was awakened, however, in the early morning by a return of the pain which again subsided. Inquiry elicited the facts that after unusual freedom from the former symptoms for some months and fairly regular menstruation, there had been complete amenorrhœa for six weeks. She had not, however, supposed herself pregnant as the catamenia had been irregular before. The breasts were slightly full and a drop of clear fluid could be expressed from the nipples. Bimanual examination, conducted with great gentleness, revealed a rounded swelling on both sides of the pelvis, the exact limits of which, as also the size of the uterus, I did not attempt to define accurately in view of the undesirability of bringing pressure to bear on the parts. The cervix was not noticeably soft. The os was not dilated and there was no vaginal hæmorrhage. The left rectus muscle was rigid but the abdomen was otherwise natural on gentle palpation. There were no general constitutional symptoms and the pulse and temperature were normal. A diagnosis of tubal pregnancy, probably unruptured but commencing to abort, was made; and surgical measures on the spot being out of the question, the patient was immediately removed with great care to the centre of the district where there is a plantation hospital.

Abdominal section was performed as soon as the necessary preparations could be completed, two European (unqualified) plantation hospital superintendents helping me as anæsthetist and assistant. An ovarian cyst of the size of a tennis ball was then found on the right side and an unruptured tubal gestation on the left. The abdominal ostium of the gravid tube was patent but not patulous, and a very small quantity of recent clot was lying amongst the fimbriæ. The right Fallopian tube appeared healthy, though it and the cyst were somewhat adherent to surrounding parts. The pregnant tube also was bound down by adhesions, some of them dense and obviously of old standing. The corresponding ovary was to all appearances normal. The tumour on the right and the swollen tube on the left were separated and removed in the usual way, but the ligatures were so applied as to leave *in situ* the right Fallopian tube and the left ovary, as neither showed any obvious lesion. During separation of the adhesions the cyst wall ruptured and there was some escape of its clear fluid contents into the peritoneal cavity. Some oozing occurred from the pelvic floor where adhesions had been separated and was not completely checked by douching with hot sterilised saline solution. With a bad light this led to considerable and annoying prolongation of the operation. It was ultimately stopped by sponge pressure and the application of adrenalin solution, though the action of the latter was somewhat disappointing. As in spite of a strong full pulse there was no sign of bleeding when the sutures had been put in, the abdominal wound was completely closed. The operation was well borne, recovery was rapid and uneventful, and the patient is now, one year later, in excellent health and menstruating regularly.

Only naked-eye examination of the parts removed was possible. The ovarian tumour was unilocular and had the usual appearance and relations of an oöphoritic cyst of moderate size. No corpus luteum of pregnancy was visible on section of the unaltered part of the viscus. The gravid tube on section showed a typical tubal mole. The amniotic cavity was distinct, but no embryo could be discerned. The mole was of rounded shape, of about the size of a large walnut, and situated at the junction of the middle and outer thirds of the tube.

It would have been easy, indeed far easier, to remove the healthy right tube and left ovary; but I venture to think it was good practice to leave both. A premature menopause is always undesirable and particularly so in a climate which, though healthy for the tropics, seems to have a specially trying effect on the nervous system. Moreover, it has, I think, been shown that an ovum from one side can find its way to the Fallopian tube of the other. The patient should thus be not hopelessly debarred from natural motherhood, and the chances of further disease or accident seemed to me insufficient to justify the sacrifice of apparently healthy organs.

Was the ovarian cystoma a mere coincidence or had it any influence in determining the intratubal detention of the ovum? I felt no trace of it at the examination made nine months previously, and as I was then able to palpate the

ovary distinctly I can confidently state that it did not then exist in tangible form. Both history and vaginal examination pointed to prior salpingitis of moderate degree of the tube which became pregnant, while the healthy right tube adjacent to the tumour was free. Increased vascularity of the pelvic viscera consequent upon the pregnancy would doubtless explain the rapid growth of a previously small, or even latent and potential, cyst in the ovary.

Improved methods of diagnosis and more frequent operations have demonstrated that extra-uterine cyesis is by no means so rare as was thought at one time; and diversity of race and modes of life would not seem to have much influence on its frequency. During three years' official and private practice in this particular district of Fiji, among a limited but polyglot community, I have met with three other instances of it besides the one here related. The diagnosis was confirmed in two of these cases by operation after rupture and in the third post mortem, the patient having succumbed immediately after admission to hospital. In each case the Fallopian tube was the site of the pregnancy.

Some authorities have denied that prior salpingitis is an etiological factor, considering that a healthy tube is more likely to become the nidus of an ovum than one the lining membrane of which is altered by disease. But the frequency with which a clear history of former tubal inflammation can be obtained from the subjects of ectopic gestation is so great that it is difficult to resist the conclusion that it must play an important if not essential rôle in the production of this abnormality. Out of a good many cases of the kind which I saw in the past at hospitals in London with which I was connected I cannot call to mind one of which this was not true and my four patients have all had a history indicative of former tubal disease. Of these women one was, like the subject of this paper, a European; the others were Hindu coolies (indentured immigrants). The latter class do hard outdoor work in the sugar-cane fields in all weathers and gonorrhœa is very prevalent among them. I have successfully removed suppurating Fallopian tubes from three of them in this part of Fiji and I have seen many others with symptoms and physical signs of salpingitis. I have not met with a case of ectopic gestation in a native woman, and I do not think that one has ever been observed. Their disinclination to apply for European medical aid would, however, account for this; and inquiries among them lead me to think that the Fijian woman is, like her sisters of other complexions and in other lands, occasionally the victim of this catastrophe.

Labasa, Vanua Levu, Fiji.

ON THE

VALUE OF THE HIGH-FREQUENCY SPARK AS A LOCAL APPLICATION.

BY E. REGINALD MORTON, M.D. TORONTO, F.R.C.S. EDIN.,

MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT OF THE LONDON HOSPITAL.

IN July, 1904, a medical man came to me to ask if I would apply the high-frequency current to his head for alopecia areata. He had suffered from this for several years and had tried everything ever suggested for this disease and concurrently had consulted and followed the advice of most of the more eminent dermatologists in England and abroad. I, of course, consented to do so, stating at the same time that I did not expect much good would result. I used a vacuum glass electrode connected to the top of the resonator, rubbing the electrode over the bald patches until a bright erythema was produced, which in this case did not take more than three or four minutes to each patch. Treatment in this manner was carried out three or four times a week for about three weeks and was then interrupted by the summer holidays. In September the patches were much smaller and fine hairs were seen to be growing in from the edges of each patch. Treatment was resumed, though not quite so frequently, for a little over two months. Hair was then growing vigorously all over the previously bald patches and by the end of the year the patient had a splendid head of hair which has maintained its good condition ever since.

From subsequent experience I have learned that the success obtained in this case was in all probability due to the ease with which hyperæmia was produced, and according as this is easy or difficult one can predict with a fair amount of certainty how far one is likely to be successful in any given case. In one case that I worked at vigorously for quite two months no good was done and the production of hyperæmia was most difficult, requiring severe sparking for a long time, and it faded away very rapidly afterwards.

In ordinary and premature alopecia, so long as the hair bulbs have not disappeared by atrophy and provided a good hyperæmia can be easily induced which persists for some hours after each application, much good of a lasting kind can be done and it is a method of treatment which ought to be in much more frequent use.

I am of the opinion that in the high-frequency spark we have a most valuable form of local stimulant which seems to have properties peculiarly its own and one the action of which is under perfect control in the hands of a person accustomed to its use. In this connexion I may say that I have employed it in an old-standing case of acne vulgaris and the rapidity with which the unsightly spots disappeared after some half-dozen applications was as surprising as it was satisfactory. The cure was, of course, not permanent, but with occasional applications the disease is easily kept under control and the method is found much more agreeable to the patient than those usually employed.

Another most valuable application of the high-frequency spark is in the treatment of port-wine marks. My first case was that of a young man who came to the London Hospital with a deep red patch of about the size of a penny on his right cheek. As I had been trying to do some good in similar cases by means of a fine galvano-cautery and by electrolysis, with indifferent results, I decided to try the high-frequency spark. For this purpose I used a metallic point electrode mounted on an insulated handle and connected with the top of the resonator. The point was held about one inch from the surface so that a hot white spark jumped across the intervening space. This was continued for several minutes until vesication was produced over the entire surface of the patch. There was no soreness afterwards worth mentioning and in about eight days the old epidermis peeled off, leaving a smooth surface, pink from the remains of inflammatory reaction, but otherwise quite like normal skin.

Another case was that of a young woman with several small stains scattered over the left side of the neck and lower jaw. Gentle treatment being desired I used a vacuum glass electrode, holding it about half an inch from the skin. This method is a more comfortable one but is not so efficient and takes a longer time. The result in this case was also quite successful.

In the last two cases the capillary vessels were confined to the superficial layers of the skin, and in all such cases this method of treatment offers little difficulty. Where the vessels extend more deeply vigorous treatment is necessary which may have to be repeated several times. I have now under treatment the most severe case I have attacked by this means. The nævus extends over the side of the neck, the cheek, the orbit, the side of the nose, and the upper lip. It is, or was, of a vivid red colour which was only partially removed by pressure. The case was one much too extensive to treat by any of the ordinary methods and I am not at all sure that the high-frequency treatment will be completely successful. The fact remains, however, that each application to any given part is followed by the removal of more or less of the redness, after the resulting inflammation has had time to subside. In those parts which have been treated twice—full time for complete subsidence of the inflammation being given after each—the redness is reduced by at least one-half. The patient is greatly encouraged and after going over these parts a third time it is believed that the discolouration will be so far reduced as no longer to constitute a serious disfigurement.

From such experience as I have had I have no hesitation in saying that port wine stains or marks, which at times constitute a very serious disfigurement, can be entirely removed by this method when they are only of moderate depth and extent, while the more severe cases can be at least very greatly improved.

A great advantage of the method is that the normal texture of the skin is quite unimpaired—there is nothing approaching a scar—thus differing from chemical agents and electrolysis. A further advantage is that it is under the most perfect control and no further reaction takes place than is desired.

Queen Anne-street, W.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Ligation of the Renal Vessels for the Cure of Persistent Urinary Renal Fistula, with One Successful Case.—A Case of Cervical Myelopathic Trichosis.

A MEETING of this society was held on May 28th, Mr. J. WARRINGTON HAWARD, the President, being in the chair.

Major M. P. HOLT, R.A.M.C., read a paper on Ligation of the Renal Vessels for the Cure of Persistent Urinary Renal Fistula, with One Successful Case. He said that there were certain conditions of a patient with persistent urinary renal sinus when nephrectomy, in the absence of the usual contra-indications, was legitimate; but it was recognised by all authorities that in such patients nephrectomy, by reason of extensive matting of the kidney to certain surrounding structures, might be quite impossible or extremely hazardous, then the fistula must remain and the patient might have the prospect of accelerated death, or at best a miserable existence. Just four years ago a case of this kind came under Major Holt's care. Six months previously the patient had sustained a ruptured kidney and most extensive far-reaching suppuration had occurred; during the next two years four separate attempts were made to perform nephrectomy, the difficulties were extreme, and on each occasion the operation had to be abandoned owing to furious hæmorrhage, so much so that further attempts were considered unjustifiable. Then it occurred to Major Holt that supposing the secretion of urine into the abscess to be the sole hindrance to healing, if permanent cessation of urine secretion on that side could be effected by ligature of all the renal vessels, then the abscess should rapidly and completely heal. No reference to any such procedure could be found in any available surgical literature, but the evidence of physiological laboratory work distinctly favoured the reasoning so far as concerned the secretion of urine. Accordingly, on June 13th, 1905, just two years and nine months after the original injury, during which time the patient had been slowly but surely losing ground, the renal vessels on that side were ligatured through the transperitoneal route. The operation was a complete success; within five days urine ceased to be present in the discharge and by the fifty-seventh day (August 9th) the sinus had completely healed. The patient has remained quite well since, now nearly two years. It was suggested that ligation of the renal vessels was preferable to any form of subcapsular piecemeal nephrectomy or morcellement, in that it presented none of the risks of the latter, and as effectually but more rapidly and more surely brought about a cure and that it deserved a further trial in suitable cases. The operation was very simple and was aseptic, in great contrast to nephrectomy under such conditions.—Mr. A. E. J. BARKER regretted that he had not known of this method previously, for had he done so he felt certain that he would have been able to benefit some patients whom he had failed to cure. He mentioned the case of a man who after an injury developed a hydronephrosis. An attempt to remove this was unsuccessful and subsequently the operation was attempted by another surgeon but the patient died under the operation. He thought this was a case in which the operation performed by Major Holt would in all probability have been successful.—Mr. STEPHEN PAGET pointed out that the ligature of the renal vessels left in the body an organ which though it had lost part of its function yet might still serve that which was concerned with internal secretion.

Sir WILLIAM R. GOWERS showed a patient with Cervical Myelopathic Trichosis. He said that the occasional occurrence in spina bifida occulta of a growth of hair across the lumbar region was pointed out by Virchow, Fischer, and von Recklinghausen. The facts had been described in an exhaustive lecture by Mr. J. Bland-Sutton.[1] The case which was now brought forward was one of similar trichosis in the cervical region, but it was unilateral and associated with unequivocal symptoms of cervical syringomyelia on the corresponding side. The patient was 41 years of age. The right arm and leg had always been a little weak, but the power in the arm began to lessen three years ago, and the weakness steadily increased, accompanied by rigidity and such excess of the wrist and other jerks that a clonus could be obtained in the flexors by pressing the fingers back. The weakness of the leg was slight, but it had always been a little smaller and less strong than the other and presented excessive knee-jerks and foot-clonus, the left being normal. Sensation on the leg and arm was perfectly normal and also on the trunk below the level of the shoulder. The spinal column seemed normal throughout, even in the cervical region. The lumbar region was free from hair; there was little on the skin in general. The cervical growth of hair occupied a triangle, of which the inner side was along the middle line of the spine from the sixth cervical to the third dorsal; opposite the first dorsal it extended nearly two inches from the spine. The hair was about an inch long and had existed all the patient's life. From the middle line a band of analgesia extended outwards from the fifth, sixth, and seventh spines to the shoulder, ceasing at the outer part of the clavicle. Sensibility to touch was unimpaired. Sensibility was normal to the left of the middle line. These facts pointed to a congenital arrest of development in the spinal cord (syringomyelia) in the cervical region. To this the state of the leg might be also due or to a slighter defect in the lumbar region. The recent development of the weakness in the arm might be reasonably ascribed to increased distension of the cavity or to a gliomatous growth of the adjacent tissue pressing on the pyramidal fibres of the arm. Another case was mentioned, that of a man, aged 26 years, who presented analgesia in the left leg only, with ulceration in the foot, which began in the toes when the patient was 12 years old, and had necessitated their amputation. The lumbar arches seemed intact, although opinions differed on this point, but he was born with an exuberant growth of hair in the lumbar region, bilateral, which was destroyed when he was eight months old by Mr. J. Warrington Haward. The case of cervical trichosis seemed unique in its position and association with evidence of syringomyelia. It seemed unique also in its unilateral character. The case presented a simpler problem than did the association with definite spina bifida. The opinion that the growth of hair was due to a vague process of irritation was without proof, and its explanation as a secondary trophic change was untenable, because it did not correspond in position to the trophic impairment due to the interference with the nerves, and because it was opposite in character, an epidermic nutritional excess, not a defect. The condition pointed to a disproportion between the inner and outer layers of the right neural ridge of the epiblast in the lower cervical region; before it united with its fellow, it split into two layers, the deeper to complete the neural tube for the spinal cord, and the superficial layer to form the epidermis over it. The inner part of the neural ridge thus formed the posterior part of the spinal cord on the side in which the defective development existed and relative excess of developmental energy in the outer layer and defect in the inner layer might be the cause of the condition. Its origin was thus taken back to the early weeks of embryonic life, even when the bones were intact. A notable feature of the cervical case was the fact that the growth of hair was of greatest vertical extent at the middle line corresponding to the edge of the neural ridge of the epiblast. Had the other side been also affected the area of trichosis would have presented a lozenge shape, which was strikingly present in some of the recorded cases of lumbar trichosis in spina bifida occulta.—The PRESIDENT said that he had removed the hair over the lumbar region because of its caudal-like appearance. He did not think there was any deformity of the lumbar vertebræ. There were loss of power in the muscles of the foot and loss of sensation. The ulceration of the toes arose from the fact that the boots were imperfectly fitted and this in association with his loss of sensation rendered the skin especially liable to destruction.—Mr. G. PERNET said that he had never seen a case of hypertrichosis which corresponded to the present case. He referred to some reported cases of hypertrichosis which had been associated with spinal disease. He thought that irritation might be the cause of hypertrichosis; this had been pointed out by various writers.—Dr. T. GRAINGER STEWART referred to the case of a man, aged 26 years, who was admitted to the National Hospital under the care of Dr. J. A. Ormerod. This man developed a spastic weakness of the right hand which gradually

[1] THE LANCET, July 2nd, 1887, p. 4.

extended to the right leg and afterwards affected the left leg. There was dissociation of sensation and the seventh cervical spine was prominent. There was a scar over the back of the neck with one or two hairs. This was due to the removal of a "hairy bag of water" from the cervical region when a child. —Sir W. R. GOWERS replied.

MEDICAL SOCIETY OF LONDON.

Conversazione and Annual Oration.

THE annual conversazione of this society was held on May 27th, the Fellows and guests being received by Sir John Tweedy and Sir Edgcombe Venning, Vice-Presidents. Sir JOHN TWEEDY on taking the chair made feeling reference to the loss sustained by the death of Sir Joseph Fayrer, one of the past presidents of the society.

The annual oration was then delivered by Dr. G. A. GIBSON (Edinburgh), who chose as his subject the Cause of the Heart Beat. He commenced by reminding his hearers that the cause of the heart beat had not been investigated by Harvey, and that Albrecht von Haller was the first to speculate on the subject; but he only suggested that the cause lay in the heart itself. The discoveries of the nervous mechanism of the heart led to some more definite views and Volkmann formulated the conception that the cause lay in the action of the ganglia of the heart. These ideas were subject to some tidal currents of opinion and the ebb and flow of thought were seen in most of the standard works. Gaskell was the pioneer of the great army of workers who in the last quarter of a century had altered the current ideas. He showed that rhythmical pulsation decreased regularly from sinus to apex, and that the rhythmical power varied inversely as the distance from the sinus; that the power must lie in the muscle cells or nerve fibres, since some parts that could be made to beat had no ganglia; that the conduction of the contraction could only be seen when the "bridge" was intact; that the auriculo-ventricular ganglia of the frog could be removed without causing standstill; and that by nerve influence the rhythmicity, conductivity, excitability, contractility, and tonicity might be increased or lessened. In all this it was to be remembered that nervous tissues were present, and Gaskell frankly admitted as much. Carlson, in reviewing Gaskell's work, emphasised this fact and the further fact that no one had proved a direct action of the vagi on muscle. Engelmann followed Gaskell and in a long series of papers strove to prove myogenesis. He had advanced many analogies but no proof of the myogenetic hypothesis. The peristalsis of the ureter, in which he had forgotten the existence of nerves; the contraction of parts of the heart which had no ganglia, in which, however, there was a wonderful mesh of nerve fibres, which Carlson had shown to have more vitality than muscle cells; the beating of the heart after the removal of nervous interference by curare, which, it might be said, we did not yet know much of in regard to its influence on special cardiac nerves; and the arguments from embryology—admittedly the most powerful at the disposal of the myogenesists—all these were fully stated by Engelmann. Engelmann further claimed the law of Bowditch and the refractory period of Marey in favour of his views, ignoring the fact that they were as much in support of neurogenesis. The explanations of Engelmann and other myogenesists were sometimes so contradictory as to cancel each other. In connexion with this matter it might be said that the recent anatomical, physiological, and pathological studies of the sino-auricular and auriculo-ventricular connexions (along with their extensions by means of Purkinje fibres) by Tawara and Keith, by Hering and Erlanger, by Stengel and by Dr. Gibson himself, had been claimed as proofs of myogenesis in forgetfulness of the presence of nerve cells and nerve fibres in these connexions. The recent beautiful work of Keith was fully detailed by Dr. Gibson as bearing on this aspect of the matter. Dr. Gibson further expressed the view that a block at the sinus—proved by Hering, Wenckebach, Ritchie, and himself—was clear evidence of neurogenesis, and that juvenile arhythmia and toxic cardiac disturbances were likewise powerful arguments in its favour. He showed how the evidence formerly advanced from the supposed myogenetic peristalsis of the intestine had had to be abandoned, since both on experimental and embryological grounds it had been discovered to be neurogenetic in origin. The researches of Romanes, Schäfer, and Carlson on the invertebrata were detailed, and it was shown that the conclusions to be drawn from them were all in favour of neurogenesis. It was freely admitted that as the heart of an invertebrate was not homologous with that of a vertebrate, such facts could only be used by way of analogy. The recent work of Yandell Henderson on the volume curve of the mammalian heart was described, from which that observer had been led to espouse neurogenesis. In Dr. Gibson's opinion the conclusions were distinctly in favour of those who held the neurogenetic view. The embryological facts could not be claimed by either side, as neither muscle nor nerve was present when the heart began to beat. The anatomical facts did not prove either hypothesis, for nerve and muscle were closely interwoven in the part which served to initiate the pulsation. Pathological evidence could be claimed by both schools of thought. Clinical observations, however, were distinctly in favour of the neurogenetic hypothesis. Beyond a doubt the curious structure recently described by Keith and Flack was that in which the pulsation took its origin, but the esoteric cause of the contraction was undoubtedly a rhythmic discharge from the nervous elements in the cardiac mechanism.

A vote of thanks to the orator was proposed by Sir EDGCOMBE VENNING, seconded by Sir LAUDER BRUNTON, and carried by acclamation.

The meeting then resolved itself into a conversazione.

CLINICAL SOCIETY OF LONDON.

Prolonged Intermittent Pyrexia.—Partial Heart Block.—Foreign Bodies in the Bronchi.—Annual Meeting.

A MEETING of this society was held on May 24th, Mr. H. H. CLUTTON, the President, being in the chair.

Dr. F. DE HAVILLAND HALL read the notes of two cases of Prolonged Pyrexia of an Intermittent Type. The first case was that of a man, aged 44 years, with pulmonary tuberculosis and enlarged glands; the second was that of a man, aged 21 years, with ulcerative endocarditis. After drawing attention to the late Dr. W. M. Ord's list of conditions giving rise to remitting or paroxysmal pyrexia, Dr. Hall pointed out that in practice cases of prolonged pyrexia were more commonly due to tuberculosis and malignant endocarditis than to any other condition. In arriving at a diagnosis family history might be of a certain assistance. On the other hand, a rheumatic family history should suggest the possibility of a rheumatic endocarditis. The past history of the patient would often yield valuable information—as, for instance, attacks of hæmoptysis. The comparative rarity of the association of valvular disease, and especially mitral stenosis, with pulmonary tuberculosis was insisted on. Stress was laid upon the importance of several examinations of the sputum, one or two negative results not being sufficient to exclude tuberculosis.—Dr. SYDNEY P. PHILLIPS remarked that it was the ate Dr. Charles Murchison who, in a classical lecture published in THE LANCET in 1879,[1] first drew attention to the numerous conditions which might give rise to intermitting pyrexia. The late Dr. Ord's contribution to the Medical Society of London was a later and not an improved edition of the same list of causes. Since Dr. Murchison's time a condition of arteritis had been shown by him (Dr. Phillips) to produce intermitting pyrexia; ulcerative colitis was another condition. The diagnosis of ulcerative endocarditis was undoubtedly very difficult and especially its differentiation from latent tuberculosis. Dr. Phillips took exception to the term "hectic pyrexia." The condition which used to be known as hectic fever, such as that which occurred with prolonged suppuration, was one in which the main symptoms were wasting and debility and the attendant pyrexia might be intermittent, remittent, or continued.—Dr. J. WALTER CARR, remarking on the second case, referred to the difficulty of diagnosis of ulcerative endocarditis, especially in cases where there was no previous history or evidence of cardiac disease and he referred to a case in illustration. The patient was an elderly man who presented some ulceration of the gums but no clue as to the existence of infective endocarditis.—Dr. J. G. GLOVER had seen some cases of rheumatic fever giving rise to intermittent pyrexia.—Dr. C. R. BOX referred to another cause of prolonged intermittent pyrexia—namely, chronic posterior basic meningitis. This condition gave rise to temperature charts just like those which had been exhibited.—Dr. HALL replied.

[1] THE LANCET, May 3rd, 1879, p. 617.

Dr. A. M. GOSSAGE made a communication on Cases of Partial Heart Block. After pointing out that conductivity might be affected separately from the other functions of cardiac muscle, he explained that depression of conductivity showed itself chiefly in the muscle fibres that connect the auricles and ventricles. Depression of conductivity was illustrated by tracings showing a lengthening of the normal interval between the contractions of the auricles and those of the ventricles, and the dropping out of ventricular beats was shown when conductivity was further depressed—e.g., by digitalis or by the action of the vagus. Tracings were exhibited where there were three auricular beats to every two ventricular, two auricular to one ventricular, and three auricular to one ventricular. In the last two cases the patients exhibited the Stokes-Adams syndrome. The nervous attacks of this syndrome were shown to be preceded and accompanied by a cessation of ventricular contractions over a considerable period. Wenckebach had suggested the possibility of a block occurring between the veins and the auricles, and a tracing was shown where two successive ventricular beats had apparently been dropped, a circumstance which could be explained by a block between auricle and ventricle for the first beat and between vein and auricle for the second.

A communication on Foreign Bodies in the Bronchi, by Dr. F. W. PRICE, was taken as read so as to enable it to appear in the Transactions of the society.

The ordinary meeting was then followed by the final annual meeting of the society. The report of the council and the treasurer's statement of accounts were received and adopted. A special general meeting will be held on Friday, June 14th, to wind up the affairs of the society and to inaugurate the Clinical Section of the Royal Society of Medicine

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DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on May 9th, Mr. G. L. Thornton, Vice-President, being in the chair.—Mr. A. H. Hawkins exhibited a specimen removed post mortem in the hospital from a patient who died from uræmia, where only one kidney had been found, and this was very small and affected with advanced interstitial nephritis. The ureter on the opposite side was found but as far as could be discovered had a blind termination.—Mr. C. E. W. Bell reported the following cases, amongst others: 1. A case of Ovarian Tumour which showed marked pulsation which was much lessened on the patient assuming the knee-elbow position. It proved on operation to be a single, thin-walled ovarian cyst with no solid material at all. The patient made a good recovery. 2. A case of a married woman who had two children. She had had typhoid fever about six weeks before operation. On the right side was felt a swelling, tense and fluctuating, dull to percussion, slightly moveable, extending into the pelvis, and plainly felt per vaginam in Douglas's pouch. On operation it proved to be a suppurating cyst (ovarian?). This was incised and the walls were sutured to the peritoneum of incision and the patient recovered. 3. A man, aged 53 years, who in 1894 had a severe accident when cleaning an engine, falling into the cleaning pit. For six months previously to admission he had suffered from gastric symptoms, with attacks of pain and vomiting, and much loss of flesh. The vomit contained free hydrochloric acid and at times consisted of "coffee grounds." There was a distinct suspicion of thickening to be felt to the right and just above the umbilicus. A posterior gastro-enterostomy was performed. No tumour was discovered but the pylorus was found to be much flattened and bound down by adhesions. The patient rapidly improved and gained a stone in weight within a month of the operation. 4. A case of Gangrene of the Leg with marked diabetes. Amputation was performed through the thigh and the patient recovered. 5. A case of a boy who developed Intestinal Obstruction after receiving a blow in the abdomen from the handle of a bicycle. On opening the abdomen from 6 to 7 feet of collapsed bowel with adherent flakes of lymph were discovered, and a hole in the mesentery through which this loop of gut had slipped, so causing obstruction. The obstruction was removed and the wound was stitched up. The patient recovered. 6. A case of Chorion Epithelioma. The following was the history. The patient was 46 years of age. Two years ago she was under the care of Mr. H. Andrew in the Exeter Dispensary, with an abdominal swelling. This proved to be a hydatidiform mole. After this she suffered from considerable hæmorrhage and was admitted into the hospital. About a year ago she had a living child. She came under Mr. Andrew again for hæmorrhage one month before her admission into hospital, and then she had a uterine tumour of about the size of a cricket ball. It remained about the same size during the month under observation. A few days before admission a small nodule was noticed in the posterior vaginal wall. On admission the patient had severe hæmorrhage which spurted out of a small nodule or cyst in the posterior vaginal wall. This was scraped out and packed. Later, hæmorrhage took place from the bladder, and when this was examined under ether it was found to be involved by ulcerated growths. A nodule also appeared in the anterior wall of the vagina. The hæmorrhage continued and the patient died from exhaustion and anæmia. A microscopical examination of scrapings of the post-vaginal nodule made by Dr. R. V. Solly proved the case to be one of chorion epithelioma. A post-mortem examination was not permitted.—Dr. Solly showed microscopical specimens. He commented on the case of chorion epithelioma, referring to its pathology and the close relationship of the disease to hydatidiform mole. He further remarked on the connexion of the ovaries with these cases. According to Pick the lutein cells of the corpus luteum have an internal secretion, which so acts on the ovum as to cause it to become fixed to the endometrium and there develop, but if there is an excess of this secretion, owing to increase in the number of lutein cells, the ovum is over developed and a mole is formed. Cuthbert Lockyer had found that in many cases of chorion epithelioma the ovaries had many lutein cysts and where they were normal to the naked eye, on microscopical examination he had found an increase in lutein cells. Chorion epithelioma was most malignant, and besides having a local malignancy the cell elements were conveyed by the blood stream to the lungs, bones, and other organs. Chorion epithelioma should always be borne in mind where hæmorrhage continued after parturition or miscarriage, especially where there were an offensive discharge and elevated temperature, as the growth being so soft and friable was very liable to be infected secondarily, and so a sepsis and particularly a streptococcic infection was superadded. The only way to make a diagnosis was by microscopical section of apparent blood clot. Another most interesting fact about chorion epithelioma, which might arise from tubal fœtation as well as after miscarriage or parturition, was that tumours identical in structure were found in males, in testicles or intrathoracic tumours, or in the ovaries of women. These arose in connexion with cell seclusions or definite teratomata or teratoid tumours.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Leeds on May 10th, Dr. E. O. Croft (Leeds), the President, being in the chair.—The President showed a microscopical specimen from a case of Primary Carcinoma of the Urethra removed from a married woman, aged 37 years, who had complained of painful micturition with soreness and irritation for several months. The growth occupied the posterior lip of the meatus urinarius and extended three-quarters of an inch down the urethra, destroying the urethro-vaginal septum. Enlarged glands were present in both groins. Complete removal was impossible.—Dr. John B. Hellier (Leeds) exhibited a specimen of Tubal Mole removed from a nullipara, aged 30 years, who had been married four years.—The President introduced a discussion on the Treatment of Albuminuria and Eclampsia of Pregnancy. In speaking of pregnancy associated with pre-existing nephritis he urged that the pregnancy should not be interrupted until very thorough general treatment had been adopted, as many patients improved rapidly and completed the pregnancy without serious trouble. In considering albuminuria of pregnancy apart from eclampsia he urged the importance of complete recumbency, warmth, milk diet, and eliminative measures. The pregnancy need not be interrupted until indications were present that the disease was not under control. Spontaneous abortion from death of the fœtus often rendered operative interference unnecessary. In the event of the necessity for interference arising he advocated the gentlest method; rapid dilatation and evacuation under deep anæsthesia (especially ether) he considered to be bad practice. The treatment of the pre-eclamptic state required more vigorous attention to elimination, and rectal and gastric lavage followed by saline injections and hot packs proved useful. Pilocarpine might also have its use in this stage but it was dangerous during the eclamptic attack. Diaphoresis was more safely produced by the hot pack. The recognition of the pre-eclamptic stage gave the medical

attendant time to adopt energetic measures. There was now no doubt that the pregnancy should be terminated by rupture of the membranes. In the absence of convulsions time might be given for dilatation to occur. Accelerative measures might be employed if necessary. The President then discussed the treatment of the eclamptic attack, including (1) the various methods directed towards the elimination of the poison or the control of the actual convulsions; and (2) the obstetric procedures for emptying the uterus. He approved of intravenous or subcutaneous saline transfusion as well as purgation by saline rectal injections and subsequent lavage. He had not found thyroid treatment effectual. For pyrexia he preferred the application of cold rather than the use of antipyretic drugs. He instanced two cases where the patient's temperature rose to 107° F. in a few hours. The operation of renal decortication required further evidence to justify its employment. He did not favour accouchement forcé, nor was Cæsarean section, in his opinion, ever necessary. He did not advocate mechanical dilators on the Bossi principle, preferring the trained and sensitive fingers of the obstetrician.—Dr. Hellier advocated all measures directed toward the elimination of the toxin. He used saline injection and transfusion. He was in favour of the interruption of pregnancy as removing the exciting cause of the toxæmia but did not believe in too rapid dilatation of the cervix and evacuation of the uterus.—The discussion was continued by Dr. David Lloyd Roberts (Manchester), Dr. William Walter (Manchester), and Dr. Alexander Stookes (Liverpool).

Reviews and Notices of Books.

The Practice of Gynæcology in Original Contributions by Eminent Authors. Edited by J. WESLEY BOVÉE, M.D., Professor of Gynæcology at the George Washington University, Washington, D.C. Illustrated with 382 engravings and 60 full-page illustrations. London: Henry Kimpton. 1906. Pp. 836. Price 31*s.* 6*d.* net.

IN order to secure breadth of view and a work which shall be of interest not only to the gynæcologist and the surgeon but also to the general practitioner this work has been written by seven gynæcologists under the editorship of one of them. As diseases of the rectum and the bladder are so intimately connected with the various affections of the pelvic organs they are also included. The arrangement of the book is founded upon pathology and bacteriology, so that a departure from the usual order has been made. As in most works which are written by several contributors there is considerable variation in the value of the different contributions.

After an opening chapter on the Examination of the Pelvic Contents by Dr. X. O. Werder follows a chapter on Developmental Anomalies of the Female Generative Organs by Dr. J. Wesley Bovée. The next two chapters on Menstruation and Displacements of the Uterus have been written by Dr. J. Riddle Goffe. The important subject of dysmenorrhœa is treated in very scanty fashion; no reference is to be found to it in the index and we are surprised to see the statement "that in many instances relief is to be afforded by removal of the ovaries and establishment of the menopause." Surely if any such drastic procedures are ever necessary or justifiable in the treatment of dysmenorrhœa the correct treatment would be to remove the uterus and not the ovaries. In the section on Displacements of the Uterus we are told that shortening the utero-sacral ligaments is the latest surgical device for relieving retro-displacements, and being the last in the process of evolution is therefore the best. With this deduction, founded as it is on an incorrect proposition, we disagree entirely. We are glad, however, to see that a few pages further on Pryor's method of causing obliteration of Douglas's pouch by packing with gauze is condemned.

The next four chapters, on Fæcal and Urinary Fistulæ, Lacerations of the Perineum, and Diseases and Injuries of the Vulva and Vagina, are of considerable value. The chapter on fæcal fistulæ deals with a subject which as a rule meets with very perfunctory treatment and is a most helpful one with a number of good illustrations. The difficult question of the operative treatment of ureteral fistulæ is fully gone into and the various operations are well described. In the 40 pages devoted to a consideration of lacerations of the perineum practically all the operations which can be performed for the relief of this condition are described, and this section, as is so often the case in American text-books, is especially full of detail. Dr. Noble does not on the whole approve of Tait's flap-splitting operation, perhaps the most frequently performed of all such plastic operations in this country. Dr. Noble's own operation and the apron operation of Warren, designed as they are to protect the wound from any contamination by the contents of the bowel, seem to us particularly ingenious and we should expect them to give excellent results. We are surprised to find that the necessity for an extensive removal of the whole of the vulva is not insisted on in the treatment of carcinoma of the vulva and nothing is said of the propriety of removing as far as possible the inguinal glands at the same time.

It is difficult to see on what system the various chapters are arranged; thus the chapter on Diseases of the Vulva is followed by one on Sterility, and this in its turn by a chapter on Diseases of the Rectum. The illustrations to this last chapter are of the crudest character and of very little value. Chapters XI. to XVII., on Inflammation of the Uterus, Lacerations of the Cervix, Inversion of the Uterus, and Benign and Malignant Tumours of that Organ, are written by Dr. G. Brown Miller. The section on endometritis contains a good account of this condition, the author being careful to separate from the inflammatory forms of that disease the cases in which the changes in the endometrium are in reality the result of chronic congestion only and are not inflammatory in origin at all. Under the heading of Subinvolution we are surprised to find the incorrect statements that immediately after delivery the fundus of the uterus is half way between the symphysis and the umbilicus and that on the tenth day the fundus is on the level of the upper margin of the symphysis pubis. In the treatment of inversion of the uterus the statement that the use of long-continued pressure on the inverted fundus by means of repositors or tampons is generally useless is hardly accurate, and we would certainly take exception to the statement that the best method of treating a chronically inverted uterus is by a modification of Küstner's operation. In the treatment of fibroid polypi we have never found it necessary to clamp or to tie the pedicle and it is certainly better to incise the tumour than to practise incision of the cervix as is recommended. The descriptions of the operations of abdominal hysterectomy and abdominal supravaginal amputation are not as good as the descriptions of the plastic operations on the vulva and vagina to which we have already referred. The very important question of the mode of spread of carcinoma of the cervix is, we think, inadequately considered in view of the important bearing which it has on the question of the choice of operation. The operation of vaginal hysterectomy is illustrated by a series of illustrations from Dudley's Diseases of Women, which are good, although they illustrate conditions never met with in the actual operation, but unfortunately those illustrating total abdominal hysterectomy by Kronig's method are poor. Two of the most interesting illustrations in the book are those on pages 460 and 461 of the simultaneous occurrence of sarcoma and carcinoma in the body of the uterus.

A special chapter by Dr. Goffe deals with the Vaginal Method of Operating; this of necessity leads to a good deal of repetition. Thus the operation of vaginal hysterectomy is fully described for the second time and so also are other vaginal operations. The technique of abdominal operations is considered by Dr. Werder.

Another instance of the want of method in arrangement is seen in Chapter XXIV., in which is given the anatomy of the Fallopian tubes and ovaries with the diseases of the Fallopian tubes, excluding infective processes and extra-uterine gestation which are discussed in a separate chapter further on. Some of the best chapters in the book are those by Dr. T. J. Watkins on Infections of the Fallopian Tubes and Ovaries, the etiology and pathology of the various conditions met with as the result of infective processes being well described, with many good illustrations. The concluding chapters are concerned with Extra-uterine Gestation and Diseases of the Kidney, Ureter, Urethra, and Bladder. The first is written by Dr. Werder and the remainder by the editor. The various affections of the ureter are very fully illustrated and the very excellent drawings from the Atlas of Tandler and Halban have been reproduced with great advantage to the text.

The whole work is, as we have said, unequal in its merits, for it has some most valuable chapters while others are far from attaining the same standard of merit. It contains, however, much information which is not as a rule to be found in the ordinary text-book of gynæcology and should therefore prove of value to practitioners and students.

The Muscles of the Eye. By LUCIEN HOWE, M.A., M.D., Professor of Ophthalmology, University of Buffalo, &c. In two volumes. Volume I., Anatomy and Physiology, including Instruments for Testing and Methods of Measurement. London and New York: G. P. Putnam's Sons. 1907. Pp. 455. Price, separate volumes, $4.25; together $7.50.

THE first part of this work is a description of the anatomy of the ocular muscles, their nerve-supply and blood vessels; a short chapter on comparative anatomy and embryology is added. The extraocular muscles are considered in great detail, stress being laid upon the importance of their "secondary" insertions. Whilst admitting the importance of these subsidiary expansions of the tendons it is difficult to assign their limits anatomically and still more so their individual physiological significance. After the elaborate description of the extrinsic muscles it is surprising to find the anatomy of the intrinsic muscles dismissed quite cursorily, though space is found for Iwanoff's antiquated diagrams of the ciliary muscle in emmetropia, myopia, and hypermetropia, diagrams which cannot now be considered to represent constant characteristics. The determination of the position of the lens by a modification of Javal's ophthalmometer and by Tscherning's ophthalmophacometer is discussed. According to the author there are many accessory muscles of accommodation, for they include most of the facial muscles. Much is made of the expansion of the occipito-frontalis fibres into the trapezius—"Later, reference will be made to this fact in connexion with headaches, pain in the occiput, or back of the neck." The ingenuity of the idea is perhaps its greatest merit.

The second part gives a good description of the physiology of the ocular muscles. It is clearly written and is well adapted to the student's needs. Scrupulous care has been shown in eliminating any reference to the bearings of the facts upon clinical conditions, for these will be dealt with in the succeeding volume. We are spared the wild generalisations which so often disfigure the writings of authors upon this subject. We hope that he will continue in the next volume to exhibit the same restraint which is characteristic of the present one. The physiology of the ocular muscles is treated in an orderly and philosophical sequence—one eye at rest, one eye in action but not necessarily in motion (accommodation), one eye in motion, both eyes at rest, both eyes in motion. Specially deserving of praise are the details of the actions of cycloplegics, mydriatics, and miotics, the author's measurements of ocular movements by photography, the descriptions of instruments and methods of measurement, and the relationship between convergence and accommodation. Stress is rightly laid upon the difference between false and true torsion, and the question is divested of many of the ambiguities which have accumulated around it.

There is a good bibliography and the volume concludes with portraits and biographical notes of Brewster, Helmholtz, Donders, Hering, Nagel, Le Conte, Hess, and Tscherning. The book is well printed, though considering the absence of half-tone illustrations it is unnecessarily heavy.

Manual of Anatomy, Systematic and Practical, including Embryology. By A. M. BUCHANAN, M.A., M.D., C.M. Glasg., F.F.P.S. Glasg., Professor of Anatomy in Anderson's College, Glasgow, &c. Vol. II., with 363 illustrations, mostly original and in colours. University Series. London: Baillière, Tindall, and Cox. 1907. Pp. xv.–950. Price 12*s.* 6*d.* net.

THE second volume of Dr. Buchanan's manual continues the regional arrangement adopted in the first and treats in order of the abdomen, thorax, head, and neck, central nervous system, and organs of special sense. Dissection guides to the various regions are appended to each section. The book is quite as comprehensive as many treatises of a more pretentious size. We find the descriptions readable and with a few exceptions they appear sufficient for all ordinary purposes. The arrangement of the book has rendered it necessary to consider the structure of the abdominal and pelvic viscera apart from their gross anatomy, consequently the full description of such viscera as the stomach, kidney, prostate, and so on, is only to be obtained by cross reference, which is a great drawback. For instance, the prostate is described on p. 798, but the description of its sheath, blood-supply, venous plexuses, and intimate structure is found 20 pages further on. The accounts of the development of the various organs are little more than brief summaries. The guides to dissection are of necessity compressed but they are something more than mere skeleton outlines and will subserve their purpose if the student is prepared for a good deal of cross reference. We again draw attention to the fact that they are printed in type which is uncomfortably small and since the book is obviously intended for use in the dissecting room as well as for general reading this objection is of considerable moment.

Seeing that the book is written for medical students, there are some points which call for criticism. Amongst other omissions we can find no mention of the auriculo-ventricular bundle of His, nor are the islands of Langerhans in the pancreas described. The downward extent of the spinal theca is not explicitly given, although it might be inferred from certain statements made. The lymphatics of the stomach, and indeed of several other organs, receive much less attention than their clinical importance demands. The illustrations, which are numerous, are well chosen but are not at all pretentious. The value of the description of the central nervous system is much enhanced by diagrams borrowed from the works of Poirier, Testut, and Charcot. An appendix contains the Basle nomenclature and a useful glossary of terms.

We congratulate Dr. Buchanan on the completion of his task and have no doubt that the book will find its sphere of usefulness.

Liverpool School of Tropical Medicine: Memoir XXI. London: Williams and Norgate. September, 1906. Pp. 118. Price 7*s.* 6*d.* net.

THE first part of this Memoir on African Tick Fever in Whites (caused by infection with the spirochæta duttoni) by Dr. A. Breinl and Dr. A. Kinghorn has already been dealt with at length in these pages.[1]

[1] THE LANCET, Jan. 5th, 1907, p. 23.

The following papers are also contained in the Memoir. 1. A Comparison between the Trypanosomes Present by Day and by Night in the Peripheral Blood of Cases of Human Trypanosomiasis, by the late Dr. J. Everett Dutton and Dr. John L. Todd. In this paper an account is given of observations made upon the blood of 20 cases of sleeping sickness at intervals of two hours extending over a period of 24 hours in ten of them and at intervals of four hours over a period of 72 hours in the other ten cases. As a control with regard to the possible effect of variations in temperature the blood of a heavily infected guinea-pig was examined after confining the animal in an incubator at different temperatures. No perceptible alteration was found in the number of parasites in blood taken from the ear. The conclusion drawn from the observation is that no marked qualitative or quantitative change, corresponding to day and night, occurred in the peripheral blood of the cases of human trypanosomiasis described in the paper. 2. The Lesions in the Lymphatic Glands in Human Trypanosomiasis, by Dr. R. Howard Mole. The author arrives at the conclusions that in the early stages of "human trypanosomiasis a remarkable and widespread increase of the germ centres in the lymphatic glands occurs, accompanied by a corresponding multiplication of the proper cells of the gland. As the disease progresses the germ centres become less prominent and not so evenly distributed in the gland. This change may be partly due to the formation of the sinus system, and partly to the growth of fibrous tissue and ultimate sclerosis of the gland. Finally, the germ centres are destroyed." There does not seem to be any conclusive evidence in the observations recorded in the paper that the changes in the lymphatic glands were really synchronous with the progress of the disease. In the very few cases dealt with the glands in some advanced cases did not seem to vary materially from those in early cases, while in other advanced cases they seemed to vary considerably. With the recent work which has been done upon leucocytes in view it is impossible to attach any great importance to the observations here recorded as they stand. No really valuable results could well be expected from material preserved in the ways described in the paper, though for these methods the author was not apparently responsible. 3. Concerning Certain Parasitic Protozoa observed in Africa, by the late Dr. Dutton, Dr. Todd, and Dr. E. N. Tobey. This paper is really a collection of preliminary notes. Some interesting observations upon malaria among the natives in the Gambia and Congo Free State are recorded. A peculiar form of onychia very probably due to a certain parasite similar to a spirochæta is described. Several trypanosomes found in different animals are also described in this paper. 4. Attempts to Cultivate Spirochæta duttoni, by Dr. Lewis A. Williams and Dr. R. Stenhouse Williams. The authors' experiments seem to show that while it is possible to keep the spirochætæ alive in defibrinated horse's blood for 28 days and in rabbit's for 25 there is no evidence that the parasites multiply when removed from the body of the host.

LIBRARY TABLE.

Practical Physiological Chemistry. By J. A. MILROY, M.D. Edin., and T. H. MILROY, M.D., B.Sc. Edin., F.R.S. Edin., Queen's College, Belfast. Second edition. London and Edinburgh: William Green and Sons. 1907. Pp. 201. Price 5*s.* net.—To judge of this work fairly we must remember that it is intended to serve as a guide to junior students attending a course of practical physiological chemistry of approximately three months' duration. It consists of four sections. Section I., Qualitative, deals with the usual subjects from organic substances, through secretions to urine—in all I.–XIV. chapters (pp. 1–111); Section II., Quantitative, deals with urine, blood, milk, gastric juice, and so on (pp. 125–169); Section III. is an Appendix on Reagents and Metrical Measures; and Section IV. sets forth Schemes for Detecting an Unknown Substance or Mixtures of Substances of Physiological Importance. We agree with the authors that they may have erred by introducing too much, for after all even a medical student's manipulative powers and memory are limited. The parts not directly suitable for junior students are placed within brackets and there are a goodly number of them. Unlike Professor Halliburton, the authors have adhered to the old proteid nomenclature and have not adopted the suggestions offered by the combined committee of the Chemical and Physiological Societies. The terms sclero-proteins for the familiar albuminoids, and protein hydrolysis for proteolysis have not been adopted. The work is carefully done and we feel sure that anyone following out such a course as is here laid down will have acquired a knowledge not of chemical physiology—for that is one of the most difficult of problems—but of the tests and reactions more especially useful to the medical student and of the quantitative methods that day by day increase in importance.

The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. SCHÄFER, LL.D. Aberd., Sc.D. Dub., F.R.S., Professor of Physiology in the University of Edinburgh. Seventh edition, revised and enlarged. With 553 illustrations, some of which are coloured. London: Longmans, Green, and Co. 1907. Pp. 507. Price 10*s.* 6*d.* net.—The reviewer's task in commenting on a work which has reached its seventh edition is always a light one and in this particular instance it is also a pleasant one, for Professor Schäfer's manual of histology is so well known and appreciated that criticism is superfluous. The present edition has been brought up to date and considerably enlarged, partly by additions to the text, especially to that descriptive of the structure of the central nervous system, and partly by the provision of new illustrations, many of which are coloured in order to give the reader a better idea of the appearance of the stained preparations. The opening chapter on the division of cells should prove of great value to the student as it contains a brief but concise *résumé* of the various forms of mitosis illustrated by excellent diagrams. Again, the chapter on the structure and development of bone is rendered clearer by the illustrations which are now coloured. As already stated, the chapter on the nervous system has been considerably amplified, many fresh illustrations are given, and all recent knowledge is incorporated in the text. The diagrams depicting the course of nerve fibres and tracts in the brain and cord and the probable relations of the cells and their axons are excellent and should prove of the greatest assistance to the student. The author is to be congratulated on the general excellence of this seventh edition of his well-known manual which we feel sure will attain even a greater measure of success than has been enjoyed by its predecessors.

LIVINGSTONE COLLEGE.—Commemoration Day at Livingstone College will be celebrated on June 5th, when the Right Honourable Sir John Kennaway, Bart., M.P., President of the Church Missionary Society, will preside. Short addresses will be given, after which the college rooms will be opened for inspection. The preservation of the health of missionaries and others in the tropics is a matter of great importance and it is for this purpose that the college was founded. Unfortunately, the deficiency of £216 with which the college accounts of the previous year closed has been increased during the last financial year to the sum of £522 and this will be further added to at the close of the present financial year unless liberal help is forthcoming. Cards of invitation to the Commemoration Day proceedings will be sent on application to the Principal, Livingstone College, Leyton, E.

THE LANCET.

LONDON: SATURDAY, JUNE 1, 1907.

Employers' Liability for Industrial Diseases.

THE recently issued report of the committee appointed by the Home Secretary to inquire into the subject of compensation for industrial diseases contains much interesting matter regarding a large number of different affections arising out of trade processes. Many of them are scarcely noticed in works on medicine and are practically known only to those whose practice lies among members of the trades specially affected. The Workmen's Compensation Act, 1906, contained a schedule of certain affections definitely arising from dangerous occupations for which the employer was made liable to compensate his workmen; these affections embraced poisoning by lead, arsenic, mercury, and phosphorus, and infection with anthrax and ankylostomiasis. The reference to the present committee was the selection of other trade diseases which might without injustice be added to this list. Two conditions practically govern the inclusion of any affection in the Act—namely, the length of time for which it renders the patient unable to follow his occupation, any period of illness less than one week falling outside the scope of the Act, and the possibility of recognising the disease as specifically caused by the workman's employment. Further, any affection which could be classed as an accident fell outside the scope of the committee's inquiry, being already covered by the Act. Here a difficulty at once arises, since it is not an easy matter to draw any hard and fast line between a disease or an injury which is due to an accident and one which cannot be so classified. For example, contact with poisonous gases may give rise to sudden unconsciousness and death, or it may, when prolonged, induce a chronic nervous affection. The criterion of an accident rightly adopted by the committee was its sudden and momentary character; and it was thus able to bring within the scope of the Act a considerable number of chronic intoxications incident to industrial occupations. In the present report the committee—the members of which were Mr. HERBERT SAMUEL, the Parliamentary Under Secretary of State for the Home Department (chairman); Professor T. CLIFFORD ALLBUTT of Cambridge; Mr. H. H. CUNYNGHAME, C.B., Assistant Under Secretary, Home Office; and Dr. T. M. LEGGE, medical inspector of factories—classifies the diseases with which it deals into the categories of general poisoning on the one hand and of local affections, involving the eye, skin, lungs, and other individual organs, on the other, and as the result of its labours it advises the addition of 18 new conditions to the schedule of the Workmen's Compensation Act.

Of the forms of general poisoning here dealt with some are already well recognised, such as the affections due to aniline poisoning and those caused by carbon bisulphide. It appears, however, that other benzene derivatives besides aniline may give rise to serious symptoms; for example, dinitrobenzol which is used in the manufacture of explosive agents. The toxic effects result from destruction of the red corpuscles of the blood in the first place, with signs of anæmia and cyanosis, but in more chronic cases the sensory and motor nerve endings are affected and muscular atrophy may ensue. Nitrous fumes may give rise to severe and even fatal poisoning in chemical works, and a dangerous gas, nickel carbonyl, is given off in the process of separating metallic nickel from its ore. An apparently novel disease is that resulting from the use of a poisonous wood from the plant Gonioma Komassi, or African boxwood, which is employed for making shuttles; headache, coryza, lacrymation, and asthmatic seizures occur, produced by the action of a special alkaloid of a very poisonous character, possibly resembling in its action the well-known arrow poison—curare. Among diseases of the skin the committee would schedule the ulceration resulting from contact with chromium compounds and the lesions which are produced by tarry products. Cancer of the scrotum as it occurs in chimney-sweeps is an allied condition which the committee also recommends for inclusion, though here it is possible to feel some doubt as to the correctness of its view, since it is difficult to be certain that careful personal cleanliness would not obviate the danger caused by soot and the employer should not be penalised for the workman's carelessness in such matters. Fortunately, the resulting epithelioma can be removed with reasonable prospect of permanent recovery. Not many diseases of the eyes seem to be directly traceable to injurious occupation, but miners' nystagmus, resulting from working in a constrained position with the eyes turned obliquely upwards, is scheduled, although the committee admits that considerable difficulty may arise in determining the exact amount of incapacity caused in individual instances, since the physical disability is not in all cases proportionate to the visible oscillation of the eyes. Cataract occurring in bottle-makers has been attributed to the action of the heat and light from the furnaces but the committee does not advise its inclusion in the list. Several local inflammatory conditions to which miners are liable are added to the schedule, among them prepatellar bursitis, so that it seems rather hard that the ordinary "housemaid's knee" occurring in domestic servants should be excluded when an almost exactly similar condition in miners is scheduled.

The most interesting section of the report is that dealing with the affections of the lungs which occur in workers in dusty occupations—grinders, potters, ganister miners, and so forth. Some controversy has existed in past times as to the nature of the resulting condition which is characterised by a gradually extending fibrosis of the lungs. This has been held, on the one hand, to be due to the direct irritation of inhaled particles of dust and, on the other hand, it has been regarded as a chronic tuberculous process, the entrance of the bacilli being facilitated by the action of the dust on the bronchial mucous membrane. The prevailing view, as set out by the committee, is that both accounts are true in different

cases, the tuberculous process readily being grafted upon the simple disease. It may be thought premature that it should employ the term "fibroid phthisis" as the name for the non-tuberculous condition, since the word phthisis is still unfortunately in the minds of many persons connected with the idea of tuberculosis, the most chronic sclerosing forms of this infection being known as fibroid phthisis. Perhaps it might have been better to adopt the general term "pneumoconiosis" or "pneumonoconiosis" which has been coined to indicate fibrotic conditions due to inhalation of dust. We hope, in any case, before very long to see the use of "phthisis" as a synonym for pulmonary tuberculosis abandoned. With regard to the inclusion in the schedule of the malady in question, two difficulties arose: firstly, that of distinguishing the disease caused by the trade conditions from other affections of the lungs which attack all classes of the population; and secondly, the economic effects upon the workmen of adding this chronic malady, which may last for ten or 15 years without causing total incapacity, to the schedule of diseases for which the employer is liable to pay compensation. Regarding the first of these considerations, the committee holds that pneumoconiosis may be distinguished from tuberculosis and from bronchitis with emphysema by characteristic signs. From the former it is differentiated by the absence of fever and of emaciation; and from the latter by the tendency to retraction of the chest and by difficulty in inspiration rather than in expiration, as well as by the appearance of particles of grit in the sputum. This last phenomenon would, however, presumably be encountered in any patient suffering from simple bronchitis who was at the same time working in a dusty atmosphere. Probably if a group of well-marked cases of pneumoconiosis were compared with an equal number of typical cases of bronchitis and emphysema a skilled observer would be able to classify the majority without difficulty into the proper categories, but we are inclined to think that the proportion of doubtful and borderland cases would in actual practice be so large as to render an undesirable amount of litigation inevitable; while if such cases were brought into court a more than usual degree of divergence of scientific medical opinion might be anticipated. It would be interesting to know whether the x rays would be of any value in assisting in the diagnosis of pneumoconiosis, since the particles of dust, being of a mineral nature, should be opaque and should add considerably to the density of the shadow on the screen. The second point discussed by the committee in relation to this affection was the probable economic effect on the workers, since the employer would naturally wish to guard himself against the payment of compensation and would insist on careful medical examination of his workmen, declining to engage any who showed signs of the slightest pulmonary affection. Workmen who have at present the prospect of many years of active work would then be thrown out of employment on account of trivial ailments. It appears to be admitted that the effect of Employers' Liability Acts has already been to render it more difficult for elderly men to get or to keep employment; and in the case of a chronic ailment like pnuemoconiosis the effect of adding it to the schedule would almost certainly be to diminish rather than to increase the general well-being of a large number of workers. Hence, the committee wisely decided to omit this ailment from the schedule of the Act. It is interesting to note that the attitudes of the various workmen's trade societies towards the proposal to schedule this disease differed one from another, possibly according to the degree of intelligence demanded by different occupations and the resulting diversity of powers to weigh immediate apparent gain against almost certain loss at a more distant date. The recommendations of the committee itself are founded on justice and commonsense, and so far as it is possible to judge in the absence of the evidence on which they were based we feel confident that they will commend themselves to all who have the welfare of the industrial population at heart.

New Vaccination Legislation.

IN our issue of May 11th we stated that Mr. JOHN BURNS had introduced into the House of Commons a Bill to substitute a statutory declaration for the certificate of conscientious objection required under Section (2) of the Vaccination Act of 1898. The Bill, which consisted of three clauses only, came up for second reading on May 24th, when Sir JOHN BATTY TUKE moved the rejection of the measure, Mr. CAVE, the Member for Kingston, seconding. Both speakers declined to believe that the Bill would effect a settlement of the vaccination question. Sir HENRY CRAIK and Sir FREDERICK BANBURY also opposed the Bill, the former saying that he considered the proposal of the President of the Local Government Board to be a concession to ignorance and prejudice. On a division Sir JOHN BATTY TUKE'S amendment was rejected by a majority of 108 in a house of 122 and a motion for the second reading was agreed to without a division. Before the division was taken Mr. JOHN BURNS, in reply to various criticisms of the measure, reminded his hearers that he had indicated that certain alterations would be made in respect to vaccination and that the Bill under consideration gave effect to one of these promises. Another promise was that the cost of vaccination should be reduced. This promise he had been enabled to perform by a Local Government Board Order.

The Order in question, which now lies before us, is dated May 21st. It amends the Vaccination Order of Oct. 21st, 1898, and is founded upon the report of the Departmental Committee which was appointed in 1903 to inquire into the cost of vaccination. Shortly, it may be said that the main result of the Order is to reduce the fees payable to public vaccinators under certain conditions, but also in some ways to make their work less irksome. The Order will come into operation on Oct. 1st. As regards payments the minimum fee of 1s. mentioned in Article 3 (1) *a* of the Order of 1898 is not interfered with, but the other payments mentioned in the same article are altered as follows. We quote from the circular issued to guardians dealing with the Order:—

The Order of 1898 requires that the contract shall provide for the payment to the public vaccinator of a minimum fee of 2s. 6d. in respect of every successful primary vaccination of any person other than a child or of any successful re-vaccination, where in either case the operation has been performed by him at his surgery or elsewhere than at the home of the person vaccinated. The new Order extends this requirement, so as to include any case of successful vaccination performed by the public vaccinator on a child whose age exceeds 12 months at his surgery or elsewhere than at the home of the child. The parent or person having the custody of the child must, however, have

requested that the child may be vaccinated elsewhere than at the home of the child and the public vaccinator must have satisfied himself that the child can be safely vaccinated having regard to Subsection (4) of Section 1 of the Vaccination Act, 1898.

The Order of 1898 requires that the contract shall provide for the payment to the public vaccinator of a minimum fee of 5*s.* in respect of every successful vaccination or revaccination performed by him at the home of the person vaccinated. The new Order alters this requirement and directs that the contract shall provide in respect of such cases for the payment of an amount not less than the sums specified in the rules set out on p. 3 of the Order in question. The effect of these rules will be that where the district is situated wholly or partly in London, or in a borough or other urban district with a population according to the returns of the last census for the time being of not less than 50,000, the amount of the payment must in every case be not less than 2*s.* 6*d.*, and that where the district is not so situated the amount must in every case be not less than 3*s.* 6*d.* Elaborate instructions are laid down as to fees to be paid in cases where the public vaccinator vaccinates within a period of 24 hours two or more persons at one and the same home or any premises (other than the surgery of the public vaccinator) where these persons were together present at any time during the period. To quote again from the circular—

> In any such case the amount to be paid to the public vaccinator will be subject in respect of the first person vaccinated or revaccinated to the rules as to the minimum fees above referred to. But otherwise the amount to be paid in such cases must be mutually agreed upon by the guardians and the public vaccinator and approved by the Board, or in default of agreement determined by the Board.

The new Order extends the period within which a public vaccinator must visit a child after due notice given from two weeks to four, so as to give him an opportunity of arranging his visit for vaccination to any home at a time when he may have other professional work in the same neighbourhood. The arrangement of the various forms which the public vaccinator has to fill up has been altered so as to make them somewhat less laborious to deal with. We should add that although the minimal fees payable have been reduced, yet the circular points out to guardians that each case must be considered on its merits as regards the actual fee to be paid and arranged by contract; and the Board states that as regards districts which are only partly situated in London, or in a borough or urban district with a population of not less than 50,000, it is contemplated that a higher fee than the minimum will be fixed if the circumstances of the district in respect of area and population are such that a higher fee should properly be paid. We only hope that the Board's contemplative attitude may be justified, but we do not feel very sanguine on the point. Boards of guardians as a rule are unwilling to offer higher fees to medical men than the law compels them to offer.

Antityphoid Inoculation in the Army.

Lieutenant-Colonel W. B. LEISHMAN, R.A.M.C., Major W. S. HARRISON, R.A.M.C., and Lieutenant E. J. H. LUXMOORE, R.A.M.C., have in the May number of the *Journal of the Royal Army Medical Corps* respectively contributed three papers on Antityphoid Inoculation in the Army which will well repay perusal. We have already briefly referred to these articles in our "Services" columns, but, as we stated at the time, they deserve more detailed consideration and we take this opportunity of returning to the subject. Lieutenant-Colonel LEISHMAN gives a *résumé* of "anti-typhoid inoculation" in his introductory contribution. This method, which was brought before the notice of the profession by Sir A. E. WRIGHT in 1897, was at first employed on a large scale in India and Egypt with most encouraging results, but after the Boer war it fell into abeyance temporarily, this being due to the fact that statistical evidence had been found hard to collect and that when collected it was only available for certain units. Such reasons for its abeyance, however, are difficult to understand, for the evidence that was obtained was practically entirely in its favour. During the Maidstone epidemic 84 nurses and attendants were inoculated and *not one was attacked* in contradistinction to 16 seizures amongst 120 nurses who were not inoculated, while the statistics which were obtained from the comparison of the inoculated and non-inoculated in the Boer war showed, as regards the Ladysmith, Princess Christian, Portland, Scottish National Red Cross, Kroonstadt, and Harrismith Hospitals, a much less incidence on the inoculated than on the non-inoculated. We have only to bear in mind these results to come to the conclusion that inoculation exercises a very marked beneficial effect. So far as we have been able to gather, there was only one adverse opinion with regard to the process—that, namely, of the late Dr. J. W. WASHBOURN of Guy's Hospital—and although this opinion must carry great weight from the personality of this distinguished physician still it is somewhat inexplicable when it is considered in connexion with the results which were elsewhere obtained in this war; at any rate, our German *confrères* have not wavered in their belief in the proceeding. Another and more valid reason was that the effects of a "negative phase" in the procedure might involve a possible danger due to the onset at first of a diminished resistance to infection. However, a committee was appointed to investigate the matter, of which Dr. S. H. C. MARTIN was President and Lieutenant-Colonel LEISHMAN was a member, the process having again been permitted after an interregnum of one and a half years, and this committee, which is still in existence, published in 1905 the results of the first portion of its work. This publication dealt with the quantitative tests of the substances that appear in the blood after inoculation and with the determination of the dose of vaccine which produces the greatest quantity of "protective substances" without undue local or general severity of reaction, and also without inducing a "negative phase" of resistance. Two inoculations with an interval of ten days were recommended, whilst it was urged that an officer of the Royal Army Medical Corps should be attached to each regiment going on foreign service. This officer was to undergo a special course of instruction at the Royal Army Medical Corps College and was to remain with the regiment for three years and to collect all information concerning the men who had been inoculated. Eight such officers have since been appointed. Lieutenant-Colonel LEISHMAN tells us that up to the present time 15,000 doses of the vaccine have been sent to India. A senior medical officer supervises the process of inoculation in each command and lectures to the men on its beneficial results, whilst a specially designed case of

apparatus is furnished to every command. Lieutenant-Colonel LEISHMAN indicates also the method of preparing the vaccine, which is practically that of Sir A. E. WRIGHT modified in a few particulars; thus the temperature for killing the vaccine has been fixed at 55° C. instead of from 60° to 65° C. With regard to the objections to the process of inoculation the "local reaction" is now much milder, so that it is no longer necessary to inoculate in the flank, and hence the inoculated does not exhibit pain or stiffness in walking. The inoculation is now made in the arm or in the pectoral region. It is also pointed out that it is importan to carry out the second inoculation, as a higher degree of immunity is afforded by successive doses compared with that which is effected by a single one; a similar result has been noticed by the German army physicians in their Herrero campaign. The dosage of the vaccine has been fixed in the following quantity: one-half of a cubic centimetre of vaccine containing 500,000,000 of the bacteria is employed for the first inoculation, and double this quantity for the second; this amount has been ascertained to give the maximum quantity of protective substances with the minimum severity of reaction at present. With regard to the standardisation of the vaccine it has been found that no accurate measurement of its protective properties can be attained.

Major HARRISON in his paper reports on the results of certain experiments which have been undertaken in connexion with the antityphoid vaccine, such as those with reference to the various methods of killing the cultures by chloroform, heat, alcohol, and toluol, and those dealing with the antitropic substances produced by vaccines prepared in different ways. With reference to the duration of the immunity resulting from the inoculation, it has been ascertained that a bactericidal activity higher than normal and the presence of agglutinins in the serum of the men who have been inoculated last as long as six years, but it is not yet known whether the amount of protection remaining at this period suffices to ward off an attack. Lastly, Major HARRISON deals with the protective action of different vaccines against multiple lethal doses of a virulent typhoid culture. The third article on the subject is by Lieutenant LUXMOORE who contributes some very valuable data on the good effect of the inoculation as observed in an epidemic outbreak in the 17th Lancers at Meerut; this regiment left England in 1905 for India and within a few weeks after its arrival enteric fever broke out in it. The results obtained by the inoculation can really be held to constitute a test case, as they were checked by examinations of the blood and by necropsies. Lieutenant LUXMOORE details first the clinical effects of the inoculation, such as redness, pain, tenderness, and lymphangitis, with the general symptoms of a varying malaise, nausea, fever, and headache lasting for 36 hours as a rule but in one case for 48 hours. These local and general symptoms occurred again after the second inoculation but in a much less degree. The immediate source of the infection was not very clear but once started it was carried on doubtless by the agency of flies which were very prevalent until a solution of 2 per cent. crude carbolic acid was substituted for dry earth in the latrines, when the flies diminished in number together with the cases of admission; by the dust, 25 per cent. of the cases showing marked bronchitis; and by the latrines and urinals. The proximity of the regiment to the native bazaar may also have had a large influence in the causation, while there was a failure of the rains in August and September, hence a large quantity of dust arose. With respect to the influence of the inoculation, Lieutenant LUXMOORE shows that of the 63 cases that occurred 61 were in men who were not inoculated, the remaining two being in men who would not submit to the second inoculation.

The perusal of these three articles can leave but one conclusion on the mind of the reader—namely, that inoculation for enteric fever is in every way as necessary for the protection of the health of the soldier in India as is vaccination against small-pox. Considering the large mortality that has up to the present time resulted amongst our men from enteric fever in the East we sincerely trust that this necessity may be recognised. It is satisfactory to learn that Lord KITCHENER is favourably impressed with the value of the treatment.

Annotations.

"Ne quid nimis."

THE MEETING OF THE GENERAL MEDICAL COUNCIL.

ON Tuesday last, May 28th, the eighty-fifth session of the General Medical Council was opened, Dr. Donald MacAlister, the President, occupying the chair. In the President's address the programme of business was outlined and does not appear to contain as many urgent topics as have been under discussion on some recent occasions. Medical reciprocity with Nova Scotia was announced, certain changes in the formulas of poisonous drugs were foreshadowed in the next Pharmacopœia, a new print of the Standing Orders was made available for public use, and a financial surplus, which though small was satisfactory in the circumstances, was declared. The most interesting question broached by Dr. MacAlister referred to the position of members of the Council who are members of the British Medical Association if the Association should decide to act as complainant in any penal cases. The position is a difficult one and will perhaps give rise to debate in the Council.

CORONERS AND DEATH CERTIFICATES.

AT a meeting of the health committee of the Wrexham town council on May 15th the medical officer of health drew attention to the necessity for greater exactness in the certification of deaths, especially those of infants. The infant mortality is heavy in Wrexham and district and many children die without having had medical attendance. He regrets that in such cases the coroner for the district should issue certificates stating that the cause of death was "probably convulsions," and that when an inquest has been held "the evidence of an untrained and illiterate so-called midwife has been seriously taken as sufficient guarantee that the deceased died of convulsions." He mentioned the fact that "convulsions" was a symptom, not a disease, contrary to the popular notion. As the deadly disease "spotted fever" was present in the district and its main symptom was "convulsions" he thought it would be well if the committee would draw the attention of the coroner to the necessity of ascertaining by a post-mortem examination the real cause of death in those cases in which there was no

medical man in attendance. He considered the issuing of certificates with such a vague and indefinite term as convulsions not only misleading but a positive danger to the public health. Our readers will be in general agreement with the view taken by the medical officer of health of Wrexham. In such cases as those indicated it seems not only mischievous but absurd for a legal coroner to give what he perhaps thinks is a plausible guess at the cause of death and to direct the jury to adopt it as their verdict. From a statement by the mayor it seems that this coroner "had criticised one of the leading medical men for not granting a certificate, although he had not seen the case before death"—surely, as the mayor remarked, "a most improper thing to do." According to one of the councillors the coroner had given certificates in such cases without holding an inquest. It is only right to add that Mr. Kenrick, the East Denbighshire coroner, at an inquest held at Llangollen on May 21st, made the following statement as to the criticisms which he had received. "I think people who make these remarks ..... criticising my conduct, should, before they speak in public, make themselves thoroughly acquainted with the facts of the case. In no case since I have been appointed as coroner have I issued a notification dispensing with the necessity of an inquest unless I have been previously furnished with the certificate of a medical man stating, of his own knowledge, that the deceased died from natural causes and specifying the actual cause of death." This seems quite satisfactory so far as it goes, but it does not meet the statement which the Mayor of Wrexham is reported to have made that the coroner had criticised one of the leading medical men for not granting a certificate, although he had not seen the case before death.

WORKMEN AND DANGEROUS CONDUCT.

IN writing of the proposed inclusion of "potters' asthma" as an "accident" under the Workmen's Compensation Act in THE LANCET of May 25th, p. 1450, we suggested that the enforcement of the provision of proper safeguards by employers might in many cases be more just than to compel them to pay compensation in all cases of injury regardless of the workman's contribution to his own mishap. The proneness of the workman to neglect or to refuse the use of apparatus provided for his protection when he thinks that it interferes with his convenience is well known. The example given below is not one in which a sanitary precaution was disregarded, but it is one which shows strikingly the reckless manner in which men behave in employments to which they have become accustomed. At a recent inquest held by Dr. G. Danford Thomas at Paddington it was proved that the deceased, a man, aged 44 years, was employed by the Metropolitan Railway Company, having as one of his duties to oil the axle-boxes of the carriages. This he was, of course, expected to do when the carriage was stationary, and as a witness from the company reasonably said, it had never been imagined that anyone would do otherwise, so there were no specific orders on the subject but merely a general regulation forbidding dangerous conduct. The deceased had, however, laid himself flat on the gangway between two carriages of a train in motion, extending himself outside in order to oil an axle-box beneath him. It happened that a train travelling in the opposite direction had had a door accidentally left open or he might have performed his dangerous feat with impunity. As it was, the swinging door caught the man's head, fracturing his skull and killing him. When we find a workman of mature age behaving in this manner we are not surprised to learn that other members of his class are not easily made to acquiesce in protective measures against risks of poisoning or other injury which to us seem obvious but which to them may be shadowy and unreal, and we are prompted to some sympathy with employers who are compelled to adopt expensive safeguards and who (although these are adequate and proper) are also subjected to heavy pecuniary loss if their men obstinately refuse to help to protect themselves. Possibly time and education may bring workmen to adopt a line of conduct more intelligent and more reasonable, but the example of the railway man referred to is hardly an isolated instance of the difficulties with which employers have to contend.

THE HOME OFFICE REPORT OF EXPERIMENTS ON LIVING ANIMALS PERFORMED IN 1906.

A WHITE-BOOK has just been issued dealing with the experiments on living animals during 1906 and shows a satisfactory working of the present Act. The inspector is able to summarise the fitness of the experimenters for their work in these terms. The tables afford evidence that: "1. Licences and certificates have been granted and allowed only upon the recommendation of persons of high scientific standing. 2. The licensees are persons who, by their training and education, are fitted to undertake experimental work and to profit by it. 3. All experimental work has been conducted in suitable cases. The table dealing with the experiments is divided into two parts, containing details of those performed with and those without anæsthetics. In the first group for England and Scotland 1429 experiments have been performed under *licence* alone, in which the animal must be killed before the effects of the anæsthetic have passed off if the pain is likely to continue after this event or if any serious injury has been inflicted on it. 1357 experiments were performed under the various *certificates*, of which 159 were in illustration of lectures, the animals being killed before recovery from the anæsthetic; 231 were on cats and dogs and 917 on other animals for various physiological, pathological, and therapeutical experiments, in which the animal was allowed to live after recovery from the anæsthetic, without which proviso the experiments would have been rendered useless. These operations are required to be performed antiseptically and if suppuration ensues the animal must be destroyed. The report points out that "after the healing of wounds the animals are not necessarily or even generally in pain, since experiments involving the removal of important parts, including portions of the brain, may be performed without giving rise to pain after the recovery from the operation; and after a section of a part of the nervous system the resulting degenerative processes are painless." With regard to the second group of experiments we find the authoritative statement that "in no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anæsthetics." This means to say that in the necessary interests of scientific medicine no pain has been inflicted by operation on any animal that is so severe as that of many surgical procedures which are daily endured by non-anæsthetised human beings. Under this group 63 experiments were done on horses, asses, or mules, 467 on dogs or cats, and 42,757 on smaller animals. Of these the vast majority consist of no more than the prick of a needle (such as thousands of human beings daily receive) for the purposes of inoculation or blood examination, and a few of them consist of feeding experiments. If an inoculation into a deep part involving a preliminary incision be necessary an anæsthetic is required. By the nature of the experiments, many of which are of a "standardising" nature, it often happens that no discomfort whatever results to the animal, but in the event of pain ensuing the animal must be killed under anæsthetics as soon as the main result of the experiments has been obtained. The increase of 7858 experiments over last year is more than accounted for by the increase of 3659 experiments performed on behalf of the Imperial Cancer

Research Fund; in this interest 21,062 experiments were altogether performed, of which 20,795 were inoculations into mice. It is encouraging to read that many of the experiments were performed on behalf of county councils, municipal corporations, and other official bodies, with a view to the preservation of the public health or for the diagnosis and treatment of disease. In Ireland 97 experiments were performed. The inspectors found that in all registered places the animals were well cared for and the licensees attentive to the requirements of the Act. No irregularities were reported from Ireland and in England only four slight breaches the result of inadvertence or misunderstanding as to the scope of licences.

THE LATE SURGEON-GENERAL SIR JOHN KER INNES, K.C.B.

IN Florence (writes an Italian contributor) a movement has been started to commemorate this distinguished army surgeon whose later years were spent in promoting the welfare of the city. The animating spirit of many charities, medical and other, Sir John Ker Innes was also deeply and actively interested in the Anglo-Catholic Church of the Holy Trinity in the Via Lamarmora, the reconstruction of which owes much to him as chairman of the committee appointed *ad hoc*. It has been decided, therefore, that the contemplated memorial of him should take the form of a new inner porch to the church, with a suitable inscription, to recall the services, as numerous as they were valuable, conferred by him on the English-speaking community, resident and migratory, of the Tuscan capital. A subscription list towards the carrying out of this object has accordingly been opened and all who may be disposed to contribute are requested to communicate either with the Messrs. Haskard, Bankers, Florence, or with the chaplain, the Rev. A. A. Knollys, 70bis, Via Cavour.

A PLETHORA OF WINE IN THE SOUTH OF FRANCE.

A CURIOUS and perplexing situation has arisen in the wine-producing districts of South-Eastern France owing, it is said, to over-production. This has led to an acute economic distress which has occasioned rioting on the part of the great number of workpeople who are engaged in the industry there. Over-production does not, of course, necessarily imply that more wine than usual has been yielded or that the harvest has been unusually prolific. It most likely means in this case that the demand for wine in one district has diminished owing to the successful production of wine elsewhere. Competition, in short, has loaded a particular market and has led to a glut which has made the sale of the product no longer profitable. Immense quantities of wine are produced in Spain and in Italy, while France's rich colony, Algeria, exports to the mother country very large consignments of wine, whereas previously France sent wine into Algeria. It is alleged, however, by the organisers of the strike movement in the Midi that the systematic adulteration of wines has been largely responsible for the crisis, and an appeal is being made to the Government to make effective the laws applying to sophistication. It is most probable that the practice of *sucrage*, which under certain conditions is sanctioned by the French Government, has brought in its train widespread abuse. If weak grape-juice is artificially sugared it is obvious that a powerful wine can be produced which can be diluted with water and so a large bulk of so-called wine can be obtained. If this practice has led to the present crisis the victims of it have ample grounds for complaint and for taking up the strong attitude which they are reported to have done. The position is not calculated to affect the quality, quantity, or price of the excellent and genuine wines exported into this country from the Médoc. Even the cheaper kinds of claret, say at 12*s*. per dozen, are superior to the *vin ordinaire* which is consumed in France on a scale comparable with the drinking of beer in this country. It is, in fact, the every-day *vin ordinaire* that is chiefly concerned in this crisis, a cheap wine which owing to its "thin" qualities will not travel without losing its sound condition. It was a very risky concession for the French Government to make that when the vintage was poor the addition of sugar to grape juice might be permitted in order that alcoholic strength might be gained, and hence an increased bulk of apparently genuine wine produced. Dishonest dealing deserves disaster and the sooner the French Government organises a purifying crusade against the particular industry concerned, if the practice of sugaring the wine is at the bottom of the trouble, the better. We have every reason for believing that the supply of claret of both the cheap and elegant kinds from the Bordeaux districts to this country is still being maintained at that high standard of purity and excellence which was shown to be the case in the report of THE LANCET Commission on the subject 18 months ago.

PEMBROKE COLLEGE, OXFORD: A MEDICAL SCHOLARSHIP.

IN our issue of March 23rd we announced that Dr. C. Theodore Williams had founded a medical scholarship at Pembroke College, Oxford, his old College. The regulations concerning the scholarship are now before us and are as follows:—

1. The scholarship founded in Pembroke College in the University of Oxford by Dr. Charles Theodore Williams shall be entitled the Theodore Williams Medical Scholarship, and shall be administered as a scholarship of the College by the Master and Fellows.
2. It shall be adjudged after open competition, and natural science shall form the predominant part of the examination. Every candidate shall be required before admission to the examination to state in writing that it is his *bond fide* intention to proceed to the degree of B.M. and B.Ch. in the University of Oxford and to practise medicine or surgery.
3. The stipend of the scholar shall be £100 a year, so long as the income of the endowment shall suffice.
4. The scholarship shall be tenable for four years, provided that the holder's conduct and diligence be approved by the Master and Fellows, but in exceptional cases if the Master and Fellows shall so determine it may be held for a fifth year. The Master and Fellows may, if they think fit, excuse the scholar from residence during such fifth year.
5. If a scholar shall be guilty of any grave misconduct or shall be negligent of his studies, the Master and Fellows shall have power to suspend his scholarship or diminish his stipend, or deprive him of his scholarship. If at any time the Master and Fellows shall be satisfied that the scholar has abandoned his intention to proceed to the degrees of B.M. and B.Ch. they may deprive him of his scholarship. In case of deprivation the scholar may appeal to the Visitor, whose decision shall be final.
6. The Theodore Williams' scholar shall be required to pass all the examinations necessary for the degree of B.A., of which the Honour School of Natural Science shall be one.
7. The Theodore Williams' scholar shall enjoy the same privileges and be subject to the same duties as the other scholars of the College; and the by-laws affecting scholars shall be applicable to him except in so far as the Master and Fellows shall from time to time determine otherwise.
8. Not less than two months before holding any examination for the scholarship the College shall publish in the leading medical papers notice of the date of the examination and of its intention to proceed to an election.
9. Candidates must be unmarried and not more than 21 years of age at the time of election. They must send in satisfactory evidence of age and one or more testimonials of conduct covering the two years last preceding the time of their application.

This scholarship is, we believe, the first medical scholarship within the University. There are medical Fellowships, such as the Radcliffe Travelling Fellowship, and one of the Sheppard Fellowships at Pembroke College. There is also the Philip Walker studentship, but the holder of that must confine himself to pathology and the scholarship is not open to competition, neither is it restricted to members of the University. We are glad to see that Regulation 6 provides that the scholar must pass all the examinations for the degree of B.A., for although this regulation still holds good as regards the University there is no telling in these

troublous times how soon an effort may be made to admit students to the examinations for the degree of B.M. who have not been through the Arts course. Pembroke College is to be congratulated on having so generous a son as Dr. Williams who is not forgetful of benefits received. The number of men who pass through the University content with the degree of B.A. without proceeding to the degree of M.A. is by no means creditable, and if they ignore their University still more do they ignore their College. To such, actions like that of Dr. Williams are both an example and a dignified reproach.

STUDIES IN EXPERIMENTAL ALCOHOLISM.

Dr. Reid Hunt, chief of the Division of Pharmacology of the United States Hygiene Laboratory, has recently concluded an extensive series of studies in experimental alcoholism.[1] Dr. Hunt undertook a series of experiments which he considers prove that profound modifications of certain physiological processes result, in a comparatively short space of time, from doses of alcohol so small that no indications of intoxication are observed. From a consideration of the known general effects of alcohol upon the metabolism Dr. Hunt was led to investigate the effect of alcohol in causing an increased oxidation of certain substances, particularly acetonitrile or methyl cyanide. This substance is very different from hydrocyanic acid, in its chemical and physiological properties, of which the latter are almost certainly due to the slow liberation of hydrocyanic acid in the body. Glacosa found thiocyanic acid in the urine after the administration of acetonitrile, whereas *in vitro* the oxidation of acetonitrile results in the formation of acetic acid. In the organism the hydrocyanic acid which is first formed subsequently unites with sulphur to form thiocyanic acid. A set of experiments was carried out to determine the effects upon the toxicity of acetonitrile of various substances that are supposed to influence physiological oxidations. One of the first substances studied in this connexion was alcohol. The experiments, which were made on mice, show that animals to which alcohol has been administered for some time acquire an increased susceptibility to acetonitrile. This occurs after the administration of amounts of alcohol far too small ever to cause indications of intoxication and from doses which almost certainly cause no anatomical lesions. This increased susceptibility is not due to a general lowering of resistance but is associated with a distinctly increased power of the body to break up the molecule of acetonitrile. The alcohol was administered by pouring it upon the food, usually oats, and it was slowly increased in strength from 5 to 50 per cent. The acetonitrile was injected subcutaneously in aqueous solution. In one experiment a mouse was treated with alcohol varying from 5 to 35 per cent. in strength over a period of about six weeks. After an interval of two months a dose of 0·23 milligramme of acetonitrile per gramme of body weight proved fatal in two hours. In a control experiment the mouse recovered after the administration of 0·42 milligramme per gramme. In this series of experiments it was found that the mice which had received alcohol died from about one-half the amount of acetonitrile that was required to kill mice which had not received alcohol. The experiments further show that there appears to be something special about the poisonous action of alcohol, inasmuch as certain other poisons—*e.g.*, amyl alcohol and chloral hydrate—which cause a loss of weight and so might be considered as likely to lower the general resistance, do not have this effect. The formation of thiocyanic acid from acetonitrile appears to be a protective reaction on the part of the organism, the thiocyanic acid being less poisonous than the hydrocyanic acid formed from the nitrile. Experiments on guinea-pigs show that animals dosed with alcohol excrete 1·7 times as much thiocyanic acid after the administration of acetonitrile as do animals which have not been given alcohol. Dr. Hunt suggests that his experiments afford clear evidence that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions and that these changes may be injurious to the body in certain circumstances. The results also afford further evidence that in some respects the action of alcohol as a food is different from that of carbohydrates and also that in all probability certain physiological properties in moderate drinkers are distinctly different from those in abstainers. These experiments are of extreme interest because of the clear demonstration which has been made in recent years that alcohol is oxidised in the body and may replace fats and carbohydrates and to a certain extent the proteids of an ordinary diet. As a result the view that alcohol in moderate amounts should be regarded as a food is almost universally accepted by physiologists. The drift of opinion is certainly towards the view that it is in all respects strictly analogous to sugar and fats, provided always that the amount used does not exceed that which can be easily oxidised by the body. Under these premisses it would be expected that alcohol in a diet would have the same effect upon an animal's susceptibility to acetonitrile as has, for example, dextrose. But this is by no means the case. Mice fed upon oats and dextrose show a very distinct resistance to acetonitrile, often recovering from two or even three times the dose which is fatal to controls. Dr. Hunt considers that while these facts are not sufficient to justify the conclusion that in many cases alcohol has not a true food value, yet they are sufficient to indicate caution in applying to practical dietaries without further investigation the brilliant and very exact results of Chittenden as to the proteid-sparing power of alcohol.

[1] Bulletin No. 33, Hygienic Laboratory, United States Public Health and Marine Hospital Service, Washington, February, 1907, pp. 43.

THE SALE OF PROPRIETARY MEDICINES ABROAD.

IN an interesting paper on secret remedies, which appeared in a recent number of the *Pharmaceutical Journal*, Mr. J. Cofman has given some particulars of the restrictions that are placed upon the sale of proprietary medicines abroad. In France the law of the eleventh year of Germinal prohibits the sale of any compound medicine, the formula of which is not published in the Codex Medicamentarius, or in the *Bulletin de l'Académie de Médecine*, or by the Government. This law does not apply to the written prescriptions of qualified medical men. The publication of advertisements recommending medicines is also prohibited. This law does not appear to be enforced rigidly, as about 4000 proprietary remedies are advertised and sold throughout the whole of France. In Germany different States have different laws against secret remedies but a general law is now in contemplation. In some States of Prussia, Würtemberg, and Bavaria the public authorities have warned the people against quackery with excellent results. The advertising of secret remedies is prohibited in Brunswick and in other States, even when the formula is published. In Austria a new preparation may not be sold without a medical prescription until its therapeutic action has been clinically tested and approved of by the medical authorities. Pharmaceutical specialities may be made only by pharmacists in business from drugs or chemicals admitted in medicine and they must possess some element of novelty or show some improvement as regards their physical properties. If a preparation is sold only in the maker's own pharmacy the exact formula must be entered in a special register which is kept for inspection by medical men. If the preparation is to be advertised and sold in other pharmacies special authorisation must be obtained. The price is calculated from the

wholesale cost of the ingredients, working expenses being included according to a tariff. Advertising expenses and discount to retailers are not allowed to increase the cost of the article. The Customs houses and postal authorities refuse to deliver medicines entering Austria from abroad to anyone but a pharmacist. The advertising or sale of quack remedies is not allowed in Austria. In his letter at p. 1528 our Vienna correspondent also deals with the matter.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ANNUAL ELECTION TO THE COUNCIL.

A MEETING of Fellows of the Royal College of Surgeons of England will be held at the College on Thursday, July 4th, for the election of four Fellows into the Council of the College in the vacancies occasioned by the retirement in rotation of Sir John Tweedy, Mr. Herbert William Page, Mr. Charles William Mansell Moullin, and Mr. Frederic Samuel Eve. Sir John Tweedy's period of office expired three years ago, but, being President, he was entitled to retain his seat on the Council until he vacated the President's chair. Mr. Moullin was elected to the Council in the year 1902 as substitute for the late Sir William MacCormac, and Mr. Eve was elected in the year 1904 as substitute for the late Mr. T. R. Jessop. The terms of office of these two deceased gentlemen as members of the Council would have expired this year. Mr. Page was elected in the year 1899, and thus completes the full period of office for a member of Council—eight years. The poll will be open for personal voting between the hours of three and five in the afternoon. A voting paper will, however, be sent to each Fellow who may desire to vote by post and whose address in the United Kingdom is registered at the College on June 21st, and Fellows will not be required to apply for voting papers.

THE WINTER ON THE SWISS MOUNTAINS.

THE following figures represent the mean temperature in the shade at 7.30 A.M. and at 1.30 P.M. mid-European time, the aggregate number of hours of bright sunshine, and the total fall of snow in inches of water during the four months December, 1906, to March, 1907.

—	—	Temperature. 7.30 A.M.	Temperature. 1.30 P.M.	Sunshine. No. of hours.	Rainfall. Days with snow.*	Rainfall. Total fall.
		Deg. F.	Deg. F.			
Säntis 2500 m.	December	9	11	78	14	6·3
	January	13	15	88	18	9·3
	February	10	13	107	12	4·0
	March	15	17	167	16	12·3
Davos, 1560 m.	December	13	20	54	18	3·4
	January	16	24	62	16	4·2
	February	11	26	92	10	2·1
	March	17	32	164	15	5·5
Gothard, 2100 m.	December	12	16	†	6	3·7
	January	16	19	†	7	0·6
	February	13	18	†	2	0·2
	March	19	24	†	3	1·4
St. Moritz, 1641 m.	December	13	†	†	10	1·1
	January	16	†	†	3	0·3
	February	13	†	†	5	1·0
	March	19	†	†	8	1·7

* A day when the snowfall gave a measurement of at least 0·04 inch when melted.

† No observations available.

The chief feature of the temperature is perhaps the little difference between the morning and afternoon readings at the two most elevated stations—Säntis and St. Gothard—when compared with the corresponding difference at Davos, which is on the lower level of 1560 metres above the sea. But although the frost was more intense at the highest position the duration of sunshine was also greater, and this must have been more than a counter-balancing advantage. All the stations occasionally experienced morning temperatures below zero, but they were more common at Säntis and St. Gothard than elsewhere, and the lowest reading at 7.30 A.M. was no lower than 8° below zero, showing just 40° of frost. At Davos the thermometer was above the freezing point at 1.30 P.M. on 27 days, of which 16 were during March, three in December, and only two in January. Readings above 35° were extremely rare, and the highest point touched by the thermometer was 41° at Davos at the end of March. At the higher observing stations of St. Gothard and Säntis the freezing point was exceeded on only two or three afternoons, all of which were in March. The atmosphere was, of course, very dry except during foggy spells but the actual figures of relative humidity are lacking. The number of days on which snow was experienced was small at Säntis and St. Gothard, as was also the actual quantity.

MEAT EXTRACT AND YEAST EXTRACT.

WE have intentionally refrained, pending some inquiries as to the reasons underlying the extraordinarily conflicting evidence given by analytical experts, from making any comment on an important case recently heard at Marylebone police-court, in which the question at issue was whether a certain extract contained extract of meat or extract of yeast, or both. The case, in short, for the prosecution was that a certain preparation had been sold to the public as a meat extract, whereas, in fact, it was essentially a vegetable or yeast extract containing on an average only 8 per cent. of extract of meat and a proportion of flavouring to give it the appearance and smell of a meat extract. The case for the defence was that it did actually contain 18 per cent. of meat extract and that when the descriptions of the article were liberally interpreted they would be found to be scientifically correct. The evidence for the prosecution was based upon the amount of creatinine found in the extract by a process of analysis adopted by Mr. Otto Hehner. This witness stated that meat extract contains about 11 per cent. of creatine *plus* creatinine and in all the extracts of meat which he had examined he found that this amount was practically constant. This invariability of the amount of creatine in extract of meat was denied but at any rate a quite definite figure is obtained for beef—namely, 0·41 per cent., and as the yield of extract from beef is about $\frac{1}{5}$th to $\frac{1}{6}$th of its weight it follows that the creatine and creatinine in the extract should approximate to from 10·25 to 12·30 per cent., figures which are absolutely in accordance with Mr. Hehner's results. Dr. B. Dyer, Mr. A. C. Chapman, and Mr. Gordon Salamon, analytical experts for the defence, contended that the method adopted by Mr. Hehner was new, untrustworthy, and worthless, Mr. Salamon adding that he was amazed at such an able and responsible authority as was Mr. Hehner bringing forward such a test. The magistrate, Mr. Paul Taylor, also took this view and accepted this evidence. He dismissed the summons, with £200 costs. By the courtesy of Mr. Hehner we have obtained from him the particulars of the method which he adopted for the determination of creatinine, on the results of which he based his evidence. It is hardly necessary now for us to say that we believe his results and the opinion founded on them to be absolutely correct, for Dr. Dyer, Mr. Chapman, and Mr. Salamon have since acknowledged "the superior accuracy of Mr. Hehner's numbers." They, however, maintain that the proportion of creatine and creatinine in the manufactured product entirely accords with the sworn testimony of the manufacturers as to the quantity of meat extract used—viz., 18 per cent.—in whichever way the test is carried out, and the difference

between them, they assert, did not after all affect the question at issue. It seems strange that the time of the court should have been so largely occupied with the hearing of analytical evidence if this evidence did not affect the question at issue and if it did not as a matter of fact guide the magistrate to the decision which he gave. However, the fact is that the test failed in the hands of the expert witnesses for the defence because they omitted to observe certain precautions in regard to carrying out the test the result of which was to give them figures far below the truth. It may be added that the differentiation of meat extract from yeast extract is based on the fact that the former contains creatine *plus* creatinine, while the latter contains, practically speaking, neither of these bodies. Creatinine yields when heated with alkaline picrate a blood-red colouration due to the formation of creatinine picrate. Creatine does not react in this way until it is first heated with dilute hydrochloric acid which converts it into creatinine. The colouration can be imitated by operating on a definite quantity of a standard solution of pure creatinine and so the amount in a given preparation may be estimated. The main point to be observed in this method is to insure that the picric acid is present in amount sufficient, or more than sufficient, to combine with all the creatinine present. Otherwise the results will be irregular and below the real figure. We consider that the analytical evidence in this case was of the utmost importance and it was most unfortunate that the mistake in analytical procedure was made, even if it was satisfactorily established that the preparation in question contained meat extract. As long as it is described honestly there is, of course, no objection to yeast extract being sold for dietetic purposes. It resembles meat extract in appearance, colour, and taste, and possesses similar dietetic properties, but it is not meat extract any more than margarine is butter. The occurrence of questions of this kind emphasises the need for the existence of a court of reference of experts or of a tribunal qualified to try highly technical cases.

GORILLAS AND PRIMITIVE MAN.

IN his interesting lectures on the Prehistoric Inhabitants of Britain, recently delivered at the Royal College of Surgeons of England, Mr. W. Wright exhibited the skull of a gorilla and contrasted it with the crania of primitive man. It is now nearly 60 years since a previous Hunterian professor, the famous Richard Owen, insisted on the same contrast. Owen's, of course, was the anti-Darwinian point of view, whereas Mr. Wright showed diagrammatically that crania tend to develop from a lower or ape-like form to a higher. When in 1859 Owen added an appendix "on the gorilla" to his reprint of lectures on the Classification and Geographical Distribution of the Mammalia, the animal was still a novelty in England. The species may indeed be said to have been re-discovered by Dr. Savage, a missionary in the Gaboon, who in 1847 sent sketches of it to Owen, but no live specimen of the gorilla seems to have been seen in England till after the publication of Owen's lectures, when one was for a time quartered at the Crystal Palace in 1859. The creature became the centre of myths. The public, including the great Owen himself, were inclined to believe the species not far removed from prehistoric man. Owen quotes romantic negro beliefs in which he is inclined to place credence as "in accordance with the ascertained structure and powers of the animal." The gorilla, according to Owen, makes a sleeping-place like a hammock. He cracks nuts with a stone and is said to walk half erect with the help of a club. Native beliefs, which Owen quotes without adopting, were that the animal built huts and roughly buried its dead. "All the terms of the aborigines in respect to the gorilla imply their opinion of his close kinship to themselves. But they have a low opinion of his intelligence." Thus Owen unconsciously played into the hands of those who at that time were inclined to assert the descent of man from a gorilla-like type. In 1861 du Chaillu published his remarkable book of travel in Equatorial Africa and described his experiences of the gorillas, all the pretty myths concerning which he ruthlessly exploded. The creature he shows to be just a great ape without human habits of any kind. Thus the theory of evolution holds man and the apes to have an ancestry in common, yet scarcely any arguments can be brought to support this belief from a consideration of the habits, as opposed to the anatomy, of the great apes.

THE WESTMINSTER CITY COUNCIL AND THE STREETS.

WE have upon previous occasions been at issue with the Westminster city council as to its management of the streets in regard to sanding them in slippery weather and also as regards the removal of snow. It is pleasant, therefore, to be able to give the council credit for its forethought as expressed in a circular just sent out. This circular informs all whom it may concern that certain streets within the boundaries of the City of Westminster will be repaved on or about certain dates. The circular further states:—

> The contracts provide for the work to be completed with all dispatch and with as little inconvenience as possible to those occupying premises along the street. The gas, water, electricity, telephone, telegraph, lighting, hydraulic power, and other trenching companies have been notified in order that they may carry out any alterations and repairs to their mains and services immediately prior to or during the execution of the proposed works, with the view of obviating interference with the paving by them in the near future. The police authorities have also been informed of the intended works, so that they may make such arrangements as are necessary for the direction and control of the street traffic during the time the street works are in the hands of the contractor.

With regard to the question of "all dispatch," we wonder whether the contract provides for the working of a night shift in the non-residential districts concerned. If work were carried on continuously day and night in, for instance, that portion of Charing Cross which is affected the inconvenience and the delay to the traffic would be reduced by one-half. We trust that the "trenching companies" will avail themselves of the opportunity afforded to them and thus also earn our congratulations. Certainly the Westminster council deserves every credit for making so gallant an effort to minimise the nuisance which invariably follows the repaving of a road.

HEMIPLEGIA WITHOUT LESION OF THE PYRAMIDAL TRACT.

THE association of hemiplegia of organic type with a lesion of the pyramidal system in some part of its course is one of the most definitely established facts in neuropathology, and according to Probst no case of organic hemiplegic paralysis without such a lesion is on record. A case observed by Dr. Spielmayer[1] of Freiburg and described by him at the meeting of the neurologists and alienists of South-West Germany held at Baden-Baden is therefore of very great interest in this connexion. Clinically the case appeared to be one of genuine epilepsy with characteristic convulsions. The patient, who was originally an intelligent woman, gradually became weak-minded and stupid. There were not at any time Jacksonian fits or any post-epileptic paralyses until two years before death (which occurred at the age of 41 years) when after an attack of status epilepticus a left-sided hemiplegia developed. This showed the typical characters of a cerebral lesion and followed the usual course of that condition. It was therefore supposed that a hæmorrhage into the internal capsule had occurred. At the

[1] Berliner Klinische Wochenschrift, August 20th, 1906, p. 1148.

necropsy no trace of such a lesion was found, nor did a most careful microscopical examination bring to light any lesion of the fibres of the pyramidal system in the pons, medulla, or spinal cord which presented identical characters on the two sides. It was found, however, that the whole of the right hemisphere was atrophic, especially so in the neighbourhood of the fissure of Rolando. Specimens prepared from the ascending frontal convolution and stained by Nissl's method and by Weigert's neuroglia stain demonstrated the replacement of the cellular layers by neuroglia with the exception of the layers of giant pyramidal and large pyramidal cells which in number, arrangement, and structure were identical with those of the sound side. It is well known that these cells are the trophic cells from the pyramidal fibres and the absence of any pyramidal lesion was therefore explained. From the examination of the cortex cerebri it would therefore appear that the hemiplegia in this case owed its origin to a lesion of the sensori-motor path beyond the upper motor neuron. It is interesting in this connexion to recall the experiment of Mott and Sherrington who showed that after section of all the posterior roots entering into the formation of the brachial plexus in monkeys the arm was paralysed, although the pyramidal tract was intact and was excitable to subsequent stimulation. It would have been of interest to know whether in Dr. Spielmayer's case the paralysed side was convulsed in fits occurring subsequently to the hemiplegia. The case is noteworthy, not only on account of its rarity but also because of the care with which it was worked out and the suggestive nature of the conclusions arrived at.

INTERNATIONAL CONGRESS ON PSYCHIATRY, NEUROLOGY, PSYCHOLOGY, AND THE CARE OF THE INSANE.

As already mentioned in THE LANCET of March 2nd, p. 605, an International Congress on Psychiatry, Neurology, Psychology, and the Care of the Insane will be held in Amsterdam from Sept. 2nd to 7th. Membership of the Congress is open to all who may be interested in the above subjects. The official languages are English, French, and German. Members pay a subscription of 10 gulden or 16*s.* 8*d.*, and ladies accompanying them a subscription of 5 gulden or 8*s.* 4*d.* A programme has now been issued giving full details of the arrangements. The work of the Congress will be conducted in three sections and there will be an exhibition of objects of interest. The first section will deal with Psychiatry and Neurology. The principal official subjects of discussion will be Theories of Hysteria, Psychoses Connected with Alcoholism, Diagnosis of Various Forms of Dementia, and the Cortical Localisation of Certain Functions. The second section will deal with Psychology and Psycho-physics. The principal subjects will be the Psychology of Puberty, the Difference Between Perception and Idea, and the Previous History of the Insane. The third section will deal with the Care of the Insane. The principal subjects will be the Management and Control of Asylums, Supervision of the Care of the Insane by the State, Instruction and Duties of the Attendants, Boarding-out, Alcoholism, and the Education of Backward Children. National committees are appointed in each of the countries represented at the Congress. The committee for Great Britain and Ireland consists of 17 members, Dr. Robert Jones of the London County Asylum, Claybury, Essex, being the president. The Congress will be opened on Sept. 2nd at 2 P.M. in the presence of Queen Wilhelmina, after which there will be a reception of the delegates and the first general meeting will be held. The sections will meet at 9 A.M. on Sept. 3rd, 4th, 5th, and 6th. The proceedings will be diversified by various excursions and entertainments. The offices of the Congress are at No. 717, Prinsengracht, Amsterdam. The visitors' accommodation committee will secure rooms for members if application is made before August 15th to Dr. D. M. van Londen at the above address. Applications for membership of the Congress must be made not later than August 1st.

SANITARY WORK ON THE ISTHMUS OF PANAMA.

DURING the last three years some remarkable sanitary work, remarkable alike in its conception and in its result, has been undertaken on the Isthmus of Panama. Dr. W. C. Gorgas, in the *Medical Record* of May 18th, gives a succinct account of this work. He points out that when the United States took possession of the canal zone three years ago there were all the conditions necessary for the breeding of stegomyia and anopheles mosquitoes, that malaria, dysentery, and small-pox were prevailing among the people, and that yellow fever was present at Panama and Colon. Organised sanitary endeavour has now caused the disappearance of yellow fever and malaria has been held in check, but for 15 miles the canal belt is low and swampy, and in the other portions rain-water barrels and cisterns are plentiful, so that all conditions for the breeding of mosquitoes are at their best in a climate that is never cold. The presence of yellow fever, apart from the stegomyia, is due to the coming of non-immune whites in large numbers who contract and propagate the disease. The health authorities have furnished pure water, sewage systems and methods for the proper disposal of night soil, and sufficient hospitals for the care of the sick. They keep up an inspection of those who are non-immune, isolate cases of yellow fever in screened houses, and kill infected mosquitoes by fumigation. By ditching, draining, and oiling stagnant waters they have lessened the anopheles mosquitoes and the consequent malarial troubles. An efficient quarantine against infected localities is maintained at the ports of entry to keep out yellow fever and for 15 months there has not been a case of it in the canal belt. This is not a coincidence but a result of the sanitary measures taken. Dysentery has also been considerably controlled by, among other things, the provision of a good water-supply, so that we may congratulate all concerned in the sanitary administration in Panama upon great results.

EPIDEMIC CEREBRO-SPINAL FEVER.

DURING the last seven or eight days there has been some diminution in the notifications of epidemic cerebro-spinal fever. In Scotland during the week ended May 25th there were 19 deaths from this cause registered in Glasgow, 5 in Leith, and 2 in Dundee. In Glasgow the weekly report issued on May 24th showed that there were at that time 116 cases under treatment. In Belfast during the week ended May 25th there were 20 deaths from this cause registered. In London during the month of April one death of a patient belonging to Poplar was registered.

As regards Hong-Kong, a telegram from the Acting Governor received at the Colonial Office on May 27th states that for the week ending May 25th there were 10 cases of plague and 10 deaths from the disease. As to the Cape Colony, the medical officer of health of the Colony states that for the week ending May 4th no further case of plague in man was discovered in King William's Town, but that on the 5th a European girl, aged 11 years, was found to be suffering from bubonic plague. The Department of Public Health of Queensland in a bulletin dated April 20th states that for the week ending on that date no case of plague occurred either in Brisbane or at Port Douglas.

THE annual dinner of the Indian Medical Service will be held in the Adams Room at the New Gaiety Restaurant, Strand, London, on Thursday, June 13th, at 7.45 P.M., when Surgeon-General Sir Benjamin Franklin, K.C.I.E., will preside. Officers intending to be present should communicate at as early a date as possible with the honorary secretary, Lieutenant-Colonel P. J. Freyer, 27, Harley-street, Cavendish-square, W.

Sir Arthur Rücker, M.A., D.Sc., LL.D., F.R.S., Principal of the University of London, will distribute the prizes to the successful students at Guy's Hospital on Thursday, July 4th next. The usual garden party will be given in the grounds.

Mr. David James Galloway, M.D., C.M. Edin., has been appointed an Unofficial Member of the Legislative Council of the Straits Settlements.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, MAY 28TH.

THE sittings of the eighty-fifth session of the General Council of Medical Education and Registration were commenced to-day at 299, Oxford-street, Dr. DONALD MACALISTER, the President, being in the chair.

New Members.

The following new members took their seats as Direct Representatives for England: Dr. Henry Langley Browne, introduced by Dr. R. Saundby; and Dr. Leonard Strong McManus and Dr. Henry Arthur Latimer, introduced by Sir John Williams. Dr. Norman Purvis Walker, introduced by Mr. Hodsdon, took his seat as Direct Representative for Scotland.

The President's Address.

The PRESIDENT then delivered his address. After making kindly allusion to the services of Sir Victor Horsley, Dr. William Bruce, Mr. George Brown, and Mr. George Jackson, who have ceased to be members of the Council, and giving a no less kindly welcome to Dr. Langley Browne, Dr. Latimer, Dr. McManus, and Dr. Norman Walker, who have taken their places, he said:—

As you are probably aware, I have been unexpectedly called by His Majesty to be the resident head of the University of Glasgow. The authorities of the University of Cambridge, to whom I owe my seat in the Council, and accordingly in this chair, have kindly expressed a desire that I should complete the term of five years for which I was last re-elected by the Senate. As the Senate is not limited in its choice to persons in continuous residence at Cambridge, and as I shall maintain a close connexion with that University, I have agreed to retain my membership of the Council as its representative. I have made such arrangements for the conduct of office business during the intervals of our sessions as will ensure that the commonwealth shall take no detriment on account of my greater distance from London. It may even be that some advantage will accrue from the opportunity afforded to your President of studying at first hand the position of medical education and practice in Scotland as well as in England. The Lord President of the Privy Council has just furnished us with an illustration. The University of Edinburgh has framed an Ordinance making certain changes in the course of study and examinations for medical degrees. On this Ordinance two of the three other Scottish Universities have offered to the Privy Council, as they are entitled by law to do, various criticisms, of which some refer to inter-university relations rather than to general principles, others perhaps to matters of substance. In regard to such general principles and matters of substance the Lord President invites an expression of opinion on the part of the General Medical Council. The Executive Committee has resolved to refer the ordinance to the Education Committee and the Examination Committee, with the request that they will respectively report to the Council whether the provisions of the ordinance are in conformity with its existing resolutions and recommendations on the subjects of professional education and professional examination.

It is with special satisfaction that I record the completion of the negotiations for medical reciprocity with the Province of Nova Scotia, to which, as you will remember, His Majesty in Council was pleased last year to apply Part II. of the Medical Act, 1886. The negotiations with the Executive Committee, to which the Council has delegated the duty of carrying into effect this part of the Act, have been conducted by the provincial authorities with the utmost goodwill and with the fullest desire to meet the requirements of the Council. As a result the committee has felt justified in granting recognition to Nova Scotian degrees and diplomas on terms which, while they fulfil the conditions of the Medical Act as regards sufficiency, are at the same time satisfactory to the Provincial Medical Board. The Board has, moreover, voluntarily undertaken to initiate legislation which will tend to raise still higher the efficiency of the medical curriculum of the province. The correspondence which has led to this gratifying result has been printed and published in the minutes of the Executive Committee. The admission of Nova Scotian qualifications to the British Register has already, as I understand, had the incidental consequence that Canadian medical graduates who have fulfilled the conditions applicable to the maritime province are now declared to be eligible for commissions in the Royal Army Medical Corps. The Australian States, which long ago entered into reciprocal relations with this country, are already in a position to offer similar advantages to their medical graduates. It is to be regretted that graduates of provincial universities in Canada other than those of Nova Scotia are still ineligible for appointments in the medical services of the Crown. It now rests with the Canadian provinces themselves to remove the disability. The Council, which has always taken a broad view of its responsibilities to the empire in general, will doubtless give the most favourable consideration to any overtures the provincial governments may make to this end. His Majesty has not yet been pleased to apply the Act to the Province of Quebec, as it is first necessary that the Privy Council should be more fully informed of the actual provisions of the local law affecting the admission to the provincial register of practitioners registered in the United Kingdom. We are told that the requisite inquiries are being made through the proper channels. Until His Majesty in Council is satisfied regarding the provisions in question the Executive Committee is unable to take further steps towards the recognition of Quebec degrees.

The Foreign Office has forwarded to the Council copies of the international agreement respecting the unification of the pharmacopœial formulas for potent drugs, which was signed at Brussels on Nov. 29th, 1906, by the diplomatic representatives of 18 states on behalf of the respective contracting governments. This agreement embodies, with slight amendments, the resolutions of the Brussels Conference of 1902. It includes the following reservation which, as chairman of the Pharmacopœia Committee, I ventured to suggest should be made on behalf of this country: "The Government of His Britannic Majesty declares that it reserves the right of introducing into the stipulations of the present agreement such modifications in detail as the progress of medical and pharmaceutical science may render necessary from time to time." In drawing up the next Pharmacopœia it will accordingly be incumbent on the Council, in the paramount interest of international uniformity and of public safety, to make certain changes in the formulas for a few poisonous drugs and preparations. The changes involved may not in all cases be deemed improvements, and if our own insular convenience only were in question might not at once be approved; but they are probably fewer and less important than other countries will be constrained under the agreement to make in the common interest of all. The reservation above mentioned, moreover, enables the Council, as the authority statutably responsible for the British Pharmacopœia, to modify the letter while observing the spirit of the agreement, so as to keep pace with the progress of medical and pharmaceutical science. The Committee of Reference in Pharmacy has had the agreement under consideration and has presented to the Pharmacopœia Committee a valuable report on the changes required to give it effect.

Two Bills, proposing amendments in the law relating to the practice of medicine and of dental surgery by joint-stock companies, which have already received the approval of the Council, have been introduced in the Upper House by Lord Hylton and have passed the second reading without opposition. They were supported in principle by Lord Halsbury, late Lord Chancellor, and by the Lord President of the Council on behalf of the Government. By consent they have been referred to a Select Committee, which will shortly sit to receive evidence from this Council and from other bodies interested respecting the abuses against which the Bills are directed and the sufficiency of the proposals therein contained for the purpose contemplated. The Registrar and your legal advisers are actively engaged in preparing for submission to the Select Committee a statement of the evidence in the possession of your Companies Bills Committee. A Bill to empower the Society of Apothecaries of London to confer on those who have passed its qualifying examination the title of "Licentiate in Medicine and Surgery" has passed through several of its stages in Parliament. Certain amendments in its terms, suggested by the Executive Committee in the interest of the Council, have been readily adopted by the promoters.

A question seriously affecting the position of members of the Council as a judicial body has been raised by a communication from the chairman of the Central Ethical Committee of the British Medical Association. The communication informs us that the annual representative meeting has decided that the Association should act as complainant in cases which might require to be brought before the General Medical Council; and that the Central Ethical Committee is the body whose duty it would be to consider whether a given case should be so brought and to prepare the case for our consideration. As many members of the Council (and of the Penal Cases Committee) are members of the British Medical Association, it appeared desirable that their position in regard to complaints made by the Association, if such were brought for inquiry before the Council (or the committee), should be made clear. I accordingly consulted our legal advisers, who are familiar with the *dicta* of the Lords Justices in cases (such as Leeson's and Allinson's) where the suspicion of bias or prejudice on the part of members of the Council has been alleged as a ground of appeal against its decisions. Their advice is that the proper course to be taken by a member of the Council who belongs to the Association is not merely to withdraw from the decision of a case in which the Association acts as complainant but to withdraw from membership of the Association altogether. The question of acting on this advice became urgent in my own case, when at the beginning of this month the Registrar reported that a formal complaint against a practitioner had been lodged at the office by a branch of the Association, and that the documents awaited my consideration in pursuance of the Standing Orders. As your President, I could not take even the first step towards a judicial inquiry so long as I remained a member of the British Medical Association. I therefore, without delay, sent in my resignation to the general secretary. So soon as my resignation takes effect I shall be able to look at the complaint; but I shall not be able to take the advice of the Penal Cases Committee upon the matter until the other members have also ceased to be connected with the Association. I have made the foregoing statement, after careful reflection, because it seems to me of the highest importance that members of the Council should be cognisant of the position resulting from the decision of the representative meeting of the Association. If that decision becomes operative, as regards either the central body or its branches, we who take any part in judicial inquiries have, in my opinion, no choice but to sever our connexion with the Association. However slight our connexion may be, circumstances might at any moment arise in relation to an inquiry wherein the Association was interested, which might be held to affect the impartiality of our judgment and so to invalidate our decision.

The Secretary for Scotland has been pleased to give directions, similar to those already given in England and Ireland, which will result in the notification to the Council of all cases in which registered practitioners are convicted in Scotland of crimes or offences punishable by fines. The thanks of the Council are due to the Government authorities for this aid to the performance of its disciplinary function. It happens, perhaps as a result of the better information at our disposal, that most of the penal cases to be brought before you this session have reference, not to allegations of "infamous conduct" but to convictions before the ordinary tribunals for crimes or other offences of various kinds. As in these cases the evidence of conviction is clear it is probable that you will have no great difficulty at arriving at a decision upon them. The striking diminution in the number of complaints concerning misconduct in a professional respect is a satisfactory feature of the present year. Certain decisions given recently in the Chancery Division of the High Court in connexion with our judgment in an inquiry held by the Council last year have raised legal questions of interest regarding the scope and meaning of the statutory phrase "infamous or disgraceful conduct in a professional respect." The Chancery decisions do not in form impugn the judgment of the Council or call in question its jurisdiction, but some of the points involved concern us so closely that I have asked the Council's solicitor to prepare a memorandum on the subject for our information. As we are advised that an appeal against the judgments is in progress, and as the cases are therefore *sub judice*, I propose that the memorandum should be communicated to the Council *in camerâ*.

At our last meeting you empowered the Executive Committee to adjust and to issue to the Council a new print of the Standing Orders, embodying therein such alterations, particularly with reference to our penal procedure and to the inspection and visitation of examinations, as the Council had by its resolutions directed or were consequential upon such resolutions. The committee has accordingly had prepared, and has approved, a complete edition of the Standing Orders in which such verbal amendments have been made as seemed necessary to give effect to the Council's intentions. Copies will be laid on the table and are now available for the use of members and of the public. For the Education Committee elaborate tables of statistics have been drawn up by the Registrar and Mr. King, with the assistance of the Branch Registrars, showing the ages at which practitioners registered during the year 1906 began and ended their curriculum. The committee will probably lay before you an analysis of these statistics and a report explaining what light they throw on the average length of the curriculum, and on the question of subdividing it into definite stages, which was referred to it last November. You will doubtless be of opinion that further statistical data, such as can be furnished only by the licensing bodies, are necessary in order to complete the information on which alone the committee can base a reasoned and reasonable solution of the question. The Practical Midwifery Committee, the recommendations of which were presented but not discussed during the winter session, has now received further replies and suggestions from licensing bodies. These will be duly communicated to the Council, and it will then be a position to adopt suitable resolutions on this important branch of professional education and examination.

In accordance with the resolution of Nov. 30th, 1906, I communicated to Sir Henry Howse and Mr. Alexis Thomson your acknowledgments of the valuable services they had rendered to the Council during their long tenure of office as assistant examiners in surgery at the Apothecaries' Hall, Dublin, and your desire to establish a system of rotation in the appointment of such examiners in future. From both have come letters expressing appreciation of the Council's consideration and concurring in the suggestion that rotation is desirable. Proposals will be made to you for the appointment of two Dublin surgeons, one to act for two years and one for four, as assistant examiners (and on occasion inspectors) for the Apothecaries' Hall. Their function is an important one, for through them the Council has to perform its statutory duty of maintaining the present standard of efficiency, and that not in surgery alone, at the examinations of this licensing body.

In conclusion, I have to congratulate the Council on finishing another financial year with a surplus instead of a deficit. But for the heavy expenses connected with the general election, expenses which are considerably increased by the introduction of the ballot system, the surplus would have amounted to £910, or a little more than last year. Of this sum, however, £870 were expended over the election, leaving a net balance of only £40. The actual expenditure on the enlargement of our chamber, and the improvement of our property, has for the time been met by means of the surplus in hand from last year. But it will next year have in whole or in part to be brought into ordinary account, and it therefore still behoves the Finance Committee to keep a watchful eye upon our outgoings, and especially on those connected with our ordinary sessions. There is good reason

to expect that at the present meeting we shall easily be able within the limits of this week to overtake all the business in hand.

On the motion of Dr. NORMAN MOORE, seconded by Mr. MORRIS, the President was thanked for his address.

Business Committee.

The Business Committee composed of the President, Dr. Norman Moore, Mr. Young, and Sir Christopher Nixon was appointed.

Professional Examinations and Competitions.

Tables showing the result of professional medical examinations during 1906, results of professional examinations for qualifications in sanitary science, public health or State medicine, results of professional dental examinations, and competitions for commissions in the medical staff of the Royal Navy, the Army Medical Service, and the Indian Medical Service were received and entered in the minutes.

Apothecaries' Hall of Ireland.

Sir JOHN MOORE proposed the following motion:—

That the Governor and Court of the Apothecaries' Hall, Dublin, be requested to furnish for the information of the Council a statement showing, in reference to the final or qualifying examination of that body: (1) the number of candidates who have presented themselves for the said examination in each year since the appointment of assistant examiners in surgery by the Council in May, 1897; (2) the number of candidates who have been successful at the said examination in each year since 1897; (3) the subjects in which the respective candidates presented themselves at each final examination during the said ten years; (4) the number of candidates rejected in each of the subjects of medicine, surgery, and midwifery; and (5) the number of times each rejected candidate has been re-examined during the past ten years.

Sir John Moore called attention in the course of his speech to the history of the Apothecaries' Hall of Ireland. He had himself noticed the result of the final examination since 1901, and he found that during the last six years 32 candidates had been examined for its Licence; of these, seven had passed. Let the members of the Council for a moment imagine all the machinery that had to be employed to license those seven men. He did not intend to put a slight upon the Apothecaries' Hall at all. If it ceased to license men for the medical profession and if it returned to its proper course of licensing pharmacists it would have, he believed, a very successful future before it. He thought they ought to get this information, because it was not all available from the books of the Council, and the question would soon arise whether representations should not be made to the Privy Council on the subject. He was aware of the fact that they could not make representations that the examination was insufficient, but they could make representations that the Hall, as a body, had so diminished in importance as not to require representation on the Council.

Dr. LITTLE seconded the motion.

Dr. ADYE-CURRAN expressed surprise that the motion had been brought forward. After its rejection last session it was in somewhat bad taste for Sir John Moore to bring it up again. If they had an Irishman to be hanged they always got an Irishman to pull the rope. There had been bad feeling for years between the Royal College of Physicians of Ireland and the Apothecaries' Hall of Ireland. However, during recent years there had not been a single fault found with the examinations of the Hall. Every inspector had complimented them on the manner in which the examinations were carried out. There was not a stricter set of examinations in Ireland. He asked the Council not to accede to this motion, because he did not think its information was really required.

After some discussion the motion was lost, 10 members voting for it and 13 against it. Nine members declined to vote.

On the motion of Dr. ADYE-CURRAN, Sir Lambert Ormsby, late President of the Royal College of Surgeons in Ireland, and Mr. F. Conway Dwyer, Fellow and examiner in surgery in the Royal College of Surgeons in Ireland, were appointed assistant examiners in surgery to the Apothecaries' Hall of Ireland, the former for a period of two years and the latter for a period of four years, in place of Sir Henry Howse and Mr. Alexis Thomson retired.

The Apothecaries' Society of London.

On the motion of Sir HUGH BEEVOR, Mr. Henry Percy Dean, L.S.A., M.B., M.S. Lond., F.R.C.S. Eng., was appointed assistant examiner in surgery to the Apothecaries' Society of London for a period of four years, in place of Mr. Peyton T. D. Beale who retired by rotation.

Nova Scotian Degrees.

A report was submitted from the Executive Committee stating that it had considered the conditions under which medical qualifications granted in the Province of Nova Scotia should be recognised for registration in the Colonial List of the Medical Register of the United Kingdom. The report further stated that on Feb. 27th, 1907, the committee adopted the following resolution:—

That any person who holds (1) the diploma or licence in medicine, surgery, and midwifery granted after examination by the Provincial Medical Board of Nova Scotia, together with the licence to practise in that province; or (2) the degrees of doctor of medicine and master of surgery of the Dalhousie University, together with the aforesaid license to practise; or (3) the degrees of doctor of medicine and master of surgery of the Halifax Medical College, together with the aforesaid licence to practise, shall be entitled to be registered in the Colonial List of the Medical Register, provided he satisfies the registrar of the General Medical Council regarding the other particulars set forth in Part II. of the Medical Act, 1886.

The PRESIDENT moved:—

That the report of the Executive Committee on the recognition of Nova Scotian degrees and diplomas be received and entered in the minutes, that the registrar be directed to give effect to the resolutions therein contained, and that the Council record satisfaction at the establishment of reciprocal relations with the Province of Nova Scotia.

The motion was agreed to unanimously.

Restoration to Medical Register.

After consideration *in camerâ* the PRESIDENT announced that the Council had resolved to direct the Registrar to restore to the Medical Register the name of Hugh Stanley Revell.

Clinical Teaching in Medicine and Surgery.

Dr. LINDSAY STEVEN moved:—

That a committee of this Council be instructed to obtain information as to the methods of clinical teaching in medicine and surgery in operation at the various teaching centres of the United Kingdom, with special reference to the numbers of students attending the individual courses, the relationship of the number of beds at the command of the teacher to the number of students attending his course, and the probable influence of the teacher being at the same time the examiner upon the size of his class, and to report to the next session of Council.

He said that in his opinion, in order to make teaching both in medicine and in surgery efficient, there should be a definite relationship between the number of students and the amount of clinical material such as hospital beds. He also thought that it was desirable that the clinical class should be relatively a small one. In this connexion he would refer to the reports on the Scottish Universities received a few years ago, in which certain remarks were incorporated by the visitor and by the inspector of the Council to the effect that in their opinion candidates, while well up in book knowledge, were really defective in the practical application of their art, and they recommended more individual attention to the clinical side and practical work. Young medical men had had to learn after they had qualified what they ought to have learnt in the hospital, and he thought that it was most desirable that such a committee as he had suggested should be appointed.

Dr. MACKAY seconded the motion, although he said that his feeling was that while in the end they would have to take up the questions which Dr. Lindsay Steven had brought before them, it was perhaps a little premature to do so until preliminary matters had been settled by the Council.

The motion was subsequently withdrawn.

The Council adjourned till Wednesday.

WEDNESDAY, MAY 29TH.

Penal Cases.

During the first part of the day the Council was occupied in the discussion of penal cases.

The Council and the British Medical Association.

A report by the Executive Committee of the Council on a communication from the British Medical Association was then received and entered on the minutes. The communication from the Association called the attention of the General Medical Council to the fact that if the Central Ethical Committee of the Association should take upon itself the duty of bringing penal cases before the consideration of the Council legal difficulties might arise from members of the Council being members of the Association or of its central committees or central council. The report of the Executive Committee contained the resolution of the Committee that no member of the British Medical Association should act as a member of the Penal Cases Committee of the Council in cases in which the Association or any branch of it was acting as complainant. It was decided that the report of the Executive Committee, which was unanimously agreed to, should be sent to the General Secretary of the British Medical Association.

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 30th, 1829.

INFLATION OF THE LUNGS OF INFANTS.

AT a late meeting of the French Institution, a case was communicated, in which a new-born infant was aroused from a state of asphyxia by the insufflation of air. A child, just born, was brought to M. Portal for the purposes of dissection; while preparing for this, some short time after receiving it, it occurred to him to blow for an instant into its mouth. In two or three minutes, heat returned, the circulation recommenced, the heart began to beat, and the supposed corpse was restored to the parents a lively infant. A similar circumstance is said to have once occurred to an anatomist at Lyons.

CLIMATE OF EGYPT.

Dr. PARISET, a French physician, who has been residing for several months in Egypt, for the purpose of making observations on the climate, gives it as his opinion, that the notion generally entertained of the insalubrity of that country is erroneously founded. He considers Egypt as, in reality, a very healthy country, and that the air is only vitiated in some parts by the absolute want of the most simple sanitary measures. The carcases of animals, for instance, are every where abandoned to putrefaction, even, indeed, in the very centres of the most populous towns. He states that he ascertained, during his residence at Assouan, that the plague is not endemical in Nubia, and that the disease so termed, is only a species of intermittent fever.

MEDICINE AND THE LAW.

Milk and the Farmer.

AT Enfield recently a case was heard in which a retail milk dealer was summoned by an inspector under the Sale of Food and Drugs Acts for selling to his assistant "new cow's milk" which contained 14 per cent. of added water. At the same time there was a summons also taken out by the inspector against the farmer who sold the milk to the retailer for supplying that which was not of the substance and quality demanded by the purchaser, and the two cases were taken together. A discussion arose as to whether the contract to supply "new cow's milk" to his customer was a warranty on the part of the farmer upon which the retailer might rely as a defence to the prosecution, and points in connexion with the procedure adopted were raised which, it was stated, would eventually be referred to the Divisional Court. The result of the hearing, however, so far as the magistrates were concerned, was that they dismissed the summons against the retailer on the evidence, holding that he had not been guilty of adding water to the milk and convicted the farmer of doing so. Another case was then heard against the farmer, in which the inspector had gone on another date to the railway station to which the farmer had consigned milk for the retailer already mentioned and had there taken samples from a churn with the result that these on analysis were shown to contain added water to the extent of 8 per cent. In this case also the bench convicted the farmer, ordering him to pay in each case a fine of 10*s.* with the costs, including the fee of the analyst. The bench called attention to the conduct of the farmer in sending milk by rail without sealing or locking the cans, an explanation of which was suggested by the inspector under the Sale of Food and Drugs Acts. His view was that farmers prefer to send their milk thus by rail without securing the lids of the churns, because if it is afterwards shown to have reached the consignee in a defective condition they can put forward the explanation that it has been tampered with in course of transit, a defence which obviously would not be open to them if they rendered such interference impossible. As the intervention of the inspector in the circumstances described was questioned on the part of the defence no more need be said with regard to a point which is purely a legal one. With regard to the locking of churns, it is obviously of importance to the public that milk should be liable to examination at any stage of its conveyance from the cow to the ultimate consumer at which adulteration can be detected and brought home to those responsible for it. The task of inspection and of protecting the public will, however, be simpler and more effective if during one of those stages—that is to say, during a journey by road or rail—theft and adulteration are rendered impossible. To send milk in a sealed or locked can can hardly be prejudicial to a farmer or to a milk dealer, and it is not usual with regard to other goods to intrust them to carriers without some corresponding precaution.

The Case of George Edalji.

It was inevitable that the Home Secretary's decision in this case should be regarded as a compromise with justice, and Mr. Gladstone must have felt very sure of his ground indeed before, by withholding compensation to a man who had been admittedly punished in error, he exposed his department to further public censure. Our distinguished *confrère*, Sir Arthur Conan Doyle, who has throughout been one of Mr. Edalji's most stalwart champions, is now vigorously combating the assumption that Mr. Edalji wrote the various anonymous letters used at his trial, and to the ordinary mind his arguments are very convincing.

ASYLUM REPORTS.

Barnwood House, Gloucester (Hospital for the Insane) (Forty-seventh Annual Report, 1906).—The number of patients treated in the hospital during 1906 averaged 147 (55 males and 92 females). There were 44 patients (14 males and 30 females) admitted during the year 1906, this being the highest admission rate for the last 30 years. Dr. J. G. Soutar draws attention to the unfavourable nature, from the recovery standpoint, of the maladies from which the male patients usually suffer. For example, in the year under review, only one of the male admissions showed any prospect of recovery. He goes on to say that he has found in recent years "that insanity among the male patients from 40 years of age upwards has, in an increasing number of cases, been associated with ascertainable arterial degeneration. These early 'senile changes' are still comparatively rare amongst the women. In the case of most of the men alcohol or syphilis may be excluded as a condition precedent to the arterial changes, but we find them amongst those who have struggled and striven often successfully and with little relaxation in arduous mental work. In other cases it would seem as if excessive devotion to athletic exercises, carried on beyond the elastic years of youth, led, in those predisposed, to old age arteries in middle-aged men." As to the causation, the medical superintendent reports that a hereditary tendency to mental and allied nervous troubles was ascertained in 47·7 per cent. of the admissions. 30 persons (11 males and 19 females) were discharged during 1906 and of these only 12 (four males and eight females) had recovered. Two female patients were discharged relieved and of the other discharges seven males and nine females left uncured. Six males and two females died during the year, all from natural causes. Thus the recovery rate is only 27·2 per cent. on the admissions, which is low compared with the average recovery rate of the past five years, which is 45·2 per cent. Dr. Soutar accounts for this decrease in the recovery rate in that during recent years there has been a marked falling-off in applications for the admission of acute cases. If this is the case it is to be deplored, considering the high position that this hospital holds and the fact that much charitable work is done by it, for "the committee of the hospital are always ready to receive persons from the educated classes suffering from recent mental disorder at low rates of payment. No case of this type is refused admission, but it is quite extraordinary how few applications are received. We have oftener than we like to fill our beds with chronic cases who can no longer pay the fees required elsewhere but can still easily afford to pay us at remunerative rates. Many of these patients are intelligent and interesting members of our community, they offer points for study and consideration, and in various ways much can be done for them, but they cannot be cured. We reluctantly accept them in lieu of acute cases, for the accommodation of whom there has recently been so little demand." Four patients have been maintained gratuitously and 60 others below the average cost of maintenance. The committee states that the sum of £4833 was invested in the purchase of £5500 stock as an addition to the Pension Fund which is now represented by £36,094 in consols.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7471 births and 4578 deaths were registered during the week ending May 25th. The annual rate of mortality, which had been equal to 15·9, 15·7, and 15·1 per 1000 in the three preceding weeks, further declined to 14·9 in the week under notice. During the first eight weeks of the current quarter the death-rate in these towns averaged 16·2 per 1000, the rate during the same period in London being 15·8. The lowest annual death-rates in the 76 towns during the week were 7·5 in Hornsey, 7·8 in Smethwick, 8·1 in Tottenham, 8·7 in Willesden, and 8·8 in East Ham; the rates in the other towns ranged upwards to 20·1 in Stockport, 22·7 in Sunderland, 23·9 in Oldham, and 24·8 in Hanley. The 4578 deaths in the 76 towns showed a decrease of 52 from the number in the preceding weeks, and included 474 which were referred to the principal epidemic diseases, against 493 and 507 in the two previous weeks; of these, 207 resulted from measles, 116 from whooping-cough, 51 from diarrhœa, 46 from diphtheria, 35 from scarlet fever, 18 from "fever" (principally enteric), and one from small-pox. The deaths from these principal epidemic diseases were equal to an annual rate of 1·5 per 1000, the rate from the same diseases in London being 1·4. No death from any of these epidemic diseases was registered last week in Plymouth, Halifax, Stockport, Devonport, or in six other of the 76 towns; the annual death rates therefrom, however, ranged upwards to 3·3 in Portsmouth and in Walsall, 4·1 in Middlesbrough, 5·0 in Derby, 6·8 in Bolton, and 7·0 in Hanley. The 207 fatal cases of measles showed a slight decline from the high numbers in recent weeks; the highest death rates from this cause were 2·1 in Derby, 2·6 in Middlesbrough, 2·7 in Bury, 2·8 in Nottingham, 5·1 in Bolton, and 7·0 in Hanley. The deaths from whooping-cough, which had been 176, 163, and 144 in the three preceding weeks, further fell last week to 116, and caused death-rates ranging upwards to 1·1 in St. Helens and in Swansea, 1·2 in Hornsey, 1·3 in Norwich, and 1·8 in Preston. The fatal cases of diphtheria, which had declined from 59 to 41 in the three preceding weeks, rose again to 46 last week, and included five deaths, equal to an annual rate of 2·1 in Derby. Of the 35 deaths from scarlet fever 13 occurred in London and three each in West Ham, Leicester, Liverpool, and Manchester. One fatal case of small-pox was registered in Cardiff, but none in any other of the 76 towns; and no small-pox patients were under treatment at the end of the week in the Metropolitan Asylums Hospitals. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2672, 2658, and 2679 at the end of the three preceding weeks, had further risen to 2732 at the end of the week under notice; 382 new cases were admitted during the week, against 346, 349, and 363 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 282, 262, and 235 in the three preceding weeks, further decreased to 230 last week, but were 17 in excess of the corrected average in the corresponding week of the previous five years. The causes of 46, or 1·0 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, West Ham, Newcastle-on-Tyne, Hull, Nottingham, Salford, and in 49 other of the 76 towns; the proportion of uncertified deaths, however, again showed a marked excess in Liverpool, Birmingham, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 19·3 and 19·7 per 1000 in the two preceding weeks, declined again to 17·5 in the week ending May 25th, but exceeded the rate in the 76 English towns by 2·6. The rates in the eight Scotch towns ranged from 12·9 in Paisley and 13·4 in Aberdeen to 19·8 in Greenock and 21·0 in Perth. The 607 deaths in the eight towns showed a decrease of 78 from the number in the previous week, and included 92 which were referred to the principal epidemic diseases, against 106, 110, and 112 in the three preceding weeks. These 92 deaths were equal to an annual rate of 2·6 per 1000, which exceeded by 1·1 the rate from the same diseases in the 76 English towns; they included 39 which were referred to whooping-cough, 28 to "fever," nine to measles, nine to diarrhœa, four to diphtheria, and three to scarlet fever, but not any to small-pox. The deaths referred to whooping-cough, which had been 40 and 52 in the two preceding weeks, declined again last week to 39, of which 33 occurred in Glasgow, two in Edinburgh, two in Dundee, and two in Paisley. The 28 fatal cases of "fever," all of which were attributed to cerebro-spinal meningitis, showed a decrease of 13 from the number in the preceding week, and included 19 in Glasgow, five in Leith, and two in Dundee. The deaths from measles, which had been 12 and eight in the two preceding weeks, rose again last week to nine, of which four were registered in Glasgow and four in Edinburgh. The nine fatal cases of diarrhœa included five in Dundee and three in Glasgow; the four deaths from diphtheria occurred in Edinburgh; and two of the three deaths from scarlet fever in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 107 in each of the two preceding weeks, decreased to 83 in the week under notice, and were 13 below the number in the corresponding week of last year. The causes of 15, or 2·5 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; the proportion of uncertified deaths in the 76 English towns during the same week did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 24·0 and 26·7 per 1000 in the two preceding weeks, declined again to 25·8 in the week ending May 25th. During the first eight weeks of the current quarter the death-rate has averaged 27·3 per 1000; the mean rate during the same period did not exceed 15·8 in London and 17·7 in Edinburgh. The 193 deaths of Dublin residents registered during the week under notice showed a decline of seven from the number returned in the previous week, and included 17 which were referred to the principal epidemic diseases, against numbers decreasing from 29 to seven in the four preceding weeks; of these, 10 resulted from whooping-cough, six from measles, and one from "fever." These 17 deaths were equal to an annual rate of 2·3 per 1000, the rate during the same week from the principal epidemic diseases being 1·4 in London and 1·8 in Edinburgh. The fatal cases of whooping-cough, which had declined from 15 to four in the four preceding weeks, rose again to ten last week; while the deaths from measles, which had been three, six, and one in the three previous weeks, again increased to six. The 193 deaths from all causes included 29 of children under one year and 45 of persons aged upwards of 60 years, each of these numbers showing a decline from those returned in the previous week. Six inquest cases and four deaths from violence were registered; and 98, or more than one-half of the deaths, occurred in public institutions. The causes of three, or 1·5 per cent., of the deaths in Dublin last week were not certified; the percentage of uncertified deaths during the week did not exceed 0·2 in London, while it was 3·7 in Edinburgh. The 164 deaths registered in Belfast during the week under notice included 20 which were referred to cerebro-spinal fever or cerebro-spinal meningitis.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon: J. C. Fergusson to the *Ariadne* on recommissioning; Staff Surgeon: S. T. Reid to the *Antrim* on recommissioning; Surgeons: W. H. Hastings to the *Antrim*, and A. R. Thomas to the *Ariadne* on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Major David Stiell retires on retired pay (dated May 25th, 1907).

Lieutenant-Colonel James S. Green is placed on temporary half-pay on account of ill-health (dated May 22nd, 1907).

Captain A. C. Duffey has been appointed to the Dublin District. Major T. B. Beach has been appointed Medical Officer, Royal Arsenal, Woolwich.

VOLUNTEER OFFICERS' DECORATION.

The King has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force :—

Northern Command: Rifle: 5th Volunteer Battalion the Durham Light Infantry: Surgeon-Major Andrew Arthur Abraham.

Scottish Command: Artillery: 1st Fifeshire Royal Garrison Artillery (Volunteers): Surgeon-Major Robert Balfour Graham. *Rifle:* 5th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Lieutenant-Colonel James Mill.

THE ROYAL NAVAL HOSPITAL, STONEHOUSE, PLYMOUTH.

Inspector-General H. Mackay Ellis, Director-General of the Royal Navy Medical Service, made his annual inspection of the Royal Naval Hospital, Stonehouse, on May 21st and 22nd. After the inspection of the medical and surgical wards he expressed his satisfaction with the result of the visit. The Director-General was accompanied by Inspector-General H. T. Cox, R.N., and the heads of departments.

Correspondence.

"Audi alteram partem."

MELÆNA NEONATORUM.

To the Editors of THE LANCET.

SIRS,—In your annotation on the above subject in THE LANCET of May 25th, p. 1443, it is suggested that melæna neonatorum may "be one of the many pathological conditions produced by the virus of congenital syphilis." This statement is supported by the authority of Dr. Balzer of the St. Louis Hospital, Paris, who states in his article on Syphilis in Brouardel and Gilbert's "Traité de Médecine," 1906, that some newly born children succumb to intestinal hæmorrhage associated with purpura, a condition known as "syphilis hæmorrhagica neonatorum." Dr. Still in his lectures on "Infantile Syphilis" also refers to this condition. Whether melæna neonatorum is always due to congenital syphilis may be open to dispute, but this diathesis is probably responsible for most cases.

I am, Sirs, yours faithfully,

New Cavendish-street, W., May 26th, 1907. C. F. MARSHALL.

CONVALESCENT HOME OF ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

To the Editors of THE LANCET.

SIRS,—May we ask you for space to appeal to Cambridge men and their friends for help in providing Addenbrooke's Hospital with a seaside branch for convalescents, such as is now felt to be a necessary equipment for every great hospital? These seaside branches are quite distinct from the ordinary convalescent home to which admission may be obtained through subscribers' letters for people needing merely rest and change of air. They are intended precisely for those whom such homes must of necessity exclude—viz., those who still need surgical care and dressings, including men, women, and children from three years old. The patients are nominated by the hospital staff and have all been under treatment at the hospital. There are thus no trivial cases. The removal of these patients at the earliest possible moment after operations or other severe illness gives much needed relief to the hospital wards, while the bright seaside and open-air life completes the work of restoration as nothing else could.

In response to an appeal made eight years ago by the medical and surgical staff of Addenbrooke's Hospital for such a branch the work was begun in a hired house by the seaside. The generosity of a few friends provided funds enough to try the experiment for some years and its success has been even beyond their hopes. But these funds are now exhausted; the lease of the temporary home at Dovercourt has come to an end; the committee has decided to build (no house not planned for this object being really suitable) and has secured an admirable site at Hunstanton. All that is now needed is £3000, towards which £600 have already been given or promised. Donations will be gratefully received at Barclay's Bank, Cambridge.

We are, Sirs, yours faithfully,

L. DE BUNSEN,
Honorary Treasurer of the Home;
DONALD MACALISTER.
Consulting Physician to Addenbrooke's Hospital.

Cambridge, May 13th, 1907.

SANITARY AUTHORITIES AND SANITARY OFFICERS.

To the Editors of THE LANCET.

SIRS,—Dr. J. H. Garrett, in his most excellent criticism on the administration of the Public Health Acts which appeared in THE LANCET of May 25th, p. 1447, has omitted to draw attention to what one may term the crowning absurdity of the law with regard to the appointment of medical officers of health. Dr. Garrett states that the law requires the medical officer of health to be a "registered medical practitioner *invariably*." This is not strictly correct. The Local Government Act, 1888, requires that he shall be legally qualified to practise medicine, surgery, and midwifery, but by the same Act authority is specially given to the Local Government Board to modify this requirement—that is to say, the Local Government Board has power to sanction the appointment of a "quack."

I am, Sirs, yours faithfully,

R. BRUCE FERGUSON, M.D. Cantab., D.P.H., &c.

London, N., May 27th, 1907.

ALBUMINOUS BODIES PRESENT IN PATHOLOGICAL EFFUSIONS.

To the Editors of THE LANCET.

SIRS,—Many thanks are due to Dr. W. C. Bosanquet's note on the above subject. I have been studying exudates and transudates from the same point of view during the past twelvemonth, but have adopted the plan of rendering the globulin precipitates free from salt by dialysis. I have supposed that globulin plus ammonium sulphate will keep unaltered for a long time and if that were the case this method would be devoid of the error against which we are warned. If the fluid to be examined be treated with the salt at once (as is possible in a hospital) need one fear any subsequent conversion of one globulin into another? These methods of analysis are naturally of no use clinically because it is a matter of days before the result is obtained, but as a subject of scientific research may we not still hope that the relative proportions of albumins, globulins, and the decomposition-products of proteids in these fluids are of profound interest?

I am, Sirs, yours faithfully,

OSKAR C. GRUNER, M.B. Lond.

Clinical Laboratory, Leeds General Infirmary, May 21st, 1907.

A SOCIETY FOR THE PREVENTION OF VENEREAL DISEASE.

To the Editors of THE LANCET.

SIRS,—Some years ago the medical profession in Germany formed a Society for the Prevention of Venereal Disease and last month was held the first meeting of a similar society for Austria. Is it not possible to do something of the same sort in Great Britain? Perhaps some of our leading medical men might make a start in the matter, as everything has to have a small beginning, and the three societies might work together in harmony and find some coöperation possible.

I am, Sirs, yours faithfully,

May 27th, 1907. H. N. R.

TRAINED NURSES ANNUITY FUND.—A drawing-room meeting will be held, by permission of Lord and Lady Ravensworth, at 71, Eaton-square, S.W., on Friday, June 14th, at 3.45 P.M., in furtherance of the objects of the annuity fund for disabled nurses. The Earl of Hardwicke will take the chair and the meeting will be addressed by Lord Loch, Lady Henry Somerset, and Dr. F. H. Champneys. Further information can be obtained from the honorary secretary, Dr. A. Ogier Ward, 73, Cheapside, London, E.C.

THE BATTLE OF THE CLUBS.

THE STRUGGLE AGAINST THE COVENTRY DISPENSARY.

(FROM OUR SPECIAL COMMISSIONER.)

(Continued from p. 1458.)

Coventry, May 27th.

THE dispute in regard to the Coventry Dispensary is a somewhat dramatic illustration of the inextricable tangle into which contract work has fallen. As for the cause of the embarrassment, it is easier to define than to remedy. It can be expressed in one word—commercialism. The practice of medicine has always been described as a professional pursuit. Money-making is therefore not the object, though it is a necessary corollary. In spite of the fact that modern economic developments have greatly reduced the rate of interest and menace the small capitalists, still the aspirations, the principles, and the etiquette governing the medical profession remain what they used to be. Indeed, the formation of medical unions throughout the length and breadth of the land will tend to strengthen and to enforce more strictly the ethical code by which the dignity of the profession is to be maintained. It is probable that if the sum total of capital necessary for a medical education together with an equal amount of work and ability were devoted to a trade or industry, the profit in hard cash made would, as a rule, far exceed that received in the form of fees for medical attendance. Therefore, if money is the primary object, trade, commerce, and industry suggest themselves and not the medical profession. To make this quite clear, the profession condemns as infamous, in the professional sense, practices which are quite legitimate in trade and commerce. As the desire to relieve suffering and to study science are the primary objects of the medical profession, its members have always been willing to do a great deal of gratuitous work. Such gratuitous work, notably that performed by the staff of the various hospitals, provides the means to relieve much suffering and to acquire great experience in the pursuit of scientific clinical study. Unfortunately, an unfair advantage has been taken of this somewhat altruistic and chivalrous attitude of the medical profession. This has reacted upon not a few medical men themselves and caused them, in a measure, to abandon their own higher standard of ethics. Thus a vicious circle has been created, those who were sinned against becoming in their turn sinners.

This situation forced itself more prominently than usual to my notice when I read carefully the defence made by the authorised representatives of the Coventry Provident Dispensary. This is set out at great length in the *Coventry Herald* of March 22nd last. A meeting of members of the dispensary is described which was presided over by Mr. A. Keene, chairman of the dispensary committee. In his opening remarks the chairman is reported to have said that "the all-important question is whether those who find the money shall rule or whether the medical staff shall likewise have a control of the management." The attitude of the members fully confirmed the chairman's assumption that they and not the medical officers found the money. Here, of course, is the fundamental error, the belief that because the members of the dispensary pay 3*s*. or 4*s*., or at most 1*d*. per week, which makes 4*s*. 4*d*. a year, therefore the medical officers are fully paid for their services. The fatal mistake on the part of the medical profession is that they have not insisted throughout on the charitable nature of the work which they were doing. This argument applies, unfortunately, not only to Coventry but to the greater part of club practice or contract work throughout the country.

The origin of such dispensaries, sick clubs, &c., must always be borne in mind. If it had never been forgotten, the cause for the present protracted battle of the clubs would not have arisen. At the commencement of the last century medical men gave their services gratuitously at the hospitals and also to a large number of poor people who rarely, if ever, were able to pay. Then in the "forties" a great humanitarian spirit of reform swept over Europe and all kinds of organisations were set on foot for the benefit of the poor. The Coventry Dispensary was a pioneer in this effort, for it was first started in 1832. Its original character as a charitable institution I have already fully described, quoting notably a resolution which was carried on July 29th, 1839, in St. Mary's Hall, Coventry, and which was to the following effect:—

1. That this meeting of the medical men of Coventry regrets, after a full consideration of the subject, that they cannot approve of the establishment of a self-supporting dispensary in this city, the principles of which they think are not adapted to the locality of Coventry. 2. That this meeting would most cordially coöperate with their fellow citizens in establishing a charitable dispensary upon the usual terms of such institutions.

Even at this early date the members of the profession foresaw the danger of what was called a self-supporting institution. It was the opposition of the medical men that caused some three years or more to elapse before the dispensary could be established; and though often stated to be self-supporting it has remained throughout a charity. All attainable statistics clearly demonstrate this to be the case. In April, 1893, a great meeting of the members of the Coventry Dispensary was held and the mayor, who was in the chair, boasted that the dispensary had in hand a balance of from £5000 to £6000. This money had been bequeathed to the "Benevolent and Provident Dispensary." Surely such bequests cannot be considered in any other light than as charitable donations, they were not investments. In those days the dispensary did not fear to publish statistics, and speaking of the abuse of the institution by rich men a prominent member, Mr. J. Bill, who at one time was chairman of the institution, said it was absurd to urge that a man who "could pay 5*s*. or 2*s*. 6*d*. but chose to pay only 2*d*. or 3*d*. for a doctor's visit was a man of honour." Here, then, we have on the highest authority and from the dispensary side a statement given when the figures were published that the medical officers of the dispensary only received 2*d*. or 3*d*. for each patient whom they saw. Surely this is charity, not in cash certainly, but in kind.

To-day the figures, the statistics, are carefully concealed. The dispensary management is so well aware it is in the wrong that it dare not publish a record of what it does. It no longer issues the annual report that it was in the habit of publishing; indeed, the dispensary even pretends that it does not know how many members it possesses. Though it collects the weekly pennies or the annual subscriptions, yet it cannot say how many members are paying. When the population of Coventry was less than 60,000 the dispensary boasted of 26,000 members. Now that the population is estimated at 87,000 the dispensary pretends that it has less than 20,000 members. The managers publish details as to the payments made to their medical officers but they will not state the number of consultations given in exchange for these sums or the extent of the population placed under the charge of the medical officers. The latter do not themselves know. Perhaps for the purpose of keeping the medical officers and the public in ignorance of the true state of affairs, a different system of payment has been introduced. As a rule a medical officer of a club or dispensary has inscribed in his book the names of all the members who have selected him for their attendant should they require medical aid. The medical officer is paid in proportion to the number of members on his book. If it is a healthy and young population the work is comparatively slight, though often the conditions are not so favourable. At Coventry the medical officers have no such books. They are paid by result and not by membership. Every weekday morning and on one evening—that is in all seven times per week—the medical officers go to the dispensary building and there receive all members who choose to ask their advice. It is like the out-patients' ward at a general hospital. There is a bookkeeper and he enters to the credit of each medical officer the patient by whom he is selected. This account is made every six months. At the end of six months if a patient continues his visits he is entered as a new patient but he can call as often as he chooses during the six months. Thus Dr. T. A. Hird, who has the largest number of dispensary patients, said he expected to find some 4000 entries made for the last six months of his services. That is to say, he will have given advice to 4000 different persons during the six months, seeing some of them only once and others several times according to the nature of their complaints. As he receives about a third of the total amount paid to the medical officers the population that looked to him in case of sickness probably have numbered from 6000 to 8000 persons.

Though official figures are not attainable an approximate estimate amply suffices for all practical purposes. In this respect I have fortunately been able to obtain from the best-informed source the statement that the more popular members of the staff may have to see at the dispensary from 60 to 130 patients, and in addition have to visit about 30 at their own homes. This may mean therefore 160 visits and consultations per day. However such figures are interpreted

they show the unsatisfactory state of affairs. For instance, I will make a fancy calculation and so as to avoid the accusation of overestimating the grievance I will take as a basis not 160 but only 100 visits and consultations per day and only 310 days of such work per annum. This makes 31,000 visits and consultations. Suppose we accept as the lowest minimum fee 1*s.* 6*d.* a consultation and 2*s.* 6*d.* a visit at the patient's own house, but as the dispensary medical officers do not provide the medicine I will set down the visits at the same fee as the consultations. The medical officer who sees on an average 100 patients per day for 310 days in the year should, at the rate of the minimum fee of 1*s.* 6*d.*, receive £2325. The highest sum ever paid to any one medical officer at Coventry was, according to the printed statement, £343 15*s.* 4*d.* for the year 1906. From the above figures, and to judge from all appearances, the probability is that this payment, though large, represents less than 6*d.* per visit or consultation. If the dispensary was a self-supporting institution where it actually pays a little more than £800 it should pay a great deal more than £2000.

There is, however, the other side of the question. If a medical practitioner received what is recognised as a full and proper fee, even though this be but the minimum fee, then the patient may expect the best treatment that it is in the power of his medical attendant to give. The ideal would be that when once at work the question of fees should not enter the practitioner's mind. It should never occur to him to say, "This is only a club patient, I cannot afford the time to examine him thoroughly." How long a consultation should last on an average has never been clearly defined, though there is a tradition about the professional quarter of an hour. Certainly this might be cut down without injury, and in dealing with a poorer class of patient the practitioner might be allowed to come to the point at once without loss of time over preliminary politeness. Therefore, and for the sake of argument, perhaps I may venture to suggest an average of ten minutes per patient. If in this is included the time taken in going to the different houses of those patients who cannot come and wait their turn at the dispensary or the surgery ten minutes per patient is a short allowance. But if this basis be accepted then in order to see 100 patients in a day the medical officer would have to devote 16 hours and 40 minutes. Under these conditions the medical officer would then have 7 hours and 20 minutes remaining for his other and better paying patients, for study, for his relaxation and pleasure, for his meals, and last, but not least, for sleep. If, however, he had, as stated above, 160 patients to see he would require more than 26 hours; therefore it could not be done, even if he worked all day and all night without a moment's pause for any purpose whatsoever. These figures show how both sides, the dispensary and the medical staff, have drifted into a false position.

The great difficulty in discussing the matter is the absence of an official pronouncement as to what should constitute the minimum fee. From numerous conversations all over the country 1*s.* 6*d.* and 2*s.* 6*d.* seem to be considered the lowest fees likely to be accepted if a plébiscite of the profession could be taken. With this understanding and to facilitate calculations we might adopt as an average 2*s.* for visits and consultations when medicine is provided and 1*s.* 6*d.* when the medical officer does not give the medicine. On the other hand, the minimum fee should be not for the minimum of attendance but for the full measure of what is necessary and this I have very roughly estimated at an average of ten minutes per patient. The difference between the sum paid to the medical officer and the 1*s.* 6*d.* which he should receive ought to be credited to his account and considered as a free gift made by him to the institution. It would then very soon be evident that these dispensaries and similar institutions are not self-supporting. They are charitable institutions and far and away the largest amount of charity given has been contributed by the members of the medical staffs.

The case on the side of the medical officers would be very clear and very startling if unfortunately almost irresistible economic forces had not compelled them to retaliate. Both sides have been to blame, the medical officers because they did not insist on the charitable nature of the work which they were doing and the members because they too readily imagined that they were paying for the services of the medical men; just as if such service, if properly rendered, could possibly be paid for by subscribing a penny per week. Not only did many of these institutions conclude that they are fully paying their medical officers but they often assumed an over-bearing tone, as from a master to a dependent. One of the Coventry dispensary officers remarked that if he went to a shop and bought something he did not treat the shop-keeper as if he was an unruly servant. He considered his relations with a tradesman as those of mutual service, but it often happened that the members of the dispensary were not so courteous or so considerate. In course of time and meeting with but little gratitude, the tendency to make the best of a bad situation naturally arose. As the charitable element became obliterated so did the commercial instinct manifest itself even among the members of the profession. Thus the professional ten minutes gradually dwindled and the time allotted to the patients became more and more proportionate with the commercial value of the pennies which they paid. It was not because medical men were insufficiently paid—that was but a secondary consideration—but it was because the practice of medicine was being degraded by an infusion of a low class of commercialism that the battle of the clubs was commenced.

Among the early pioneers of this movement were the majority of the Coventry medical practitioners. How they denounced the Coventry Provident Dispensary and formed a Coventry Public Medical Service managed solely by members of the profession has been fully described in these columns and the progress made recorded from time to time. The dispensary constituted a huge monopoly, handing over a population of some 25,000 persons to five medical men who would thus have many thousand more people on their books than they could possibly attend to properly. Therefore, when the medical practitioners of the town set themselves to the task of organising a model medical service for those who were too poor to pay the usual fees, they declared that there should be no monopoly but that every recognised resident practitioner could join if he chose to do that sort of work. Then, and so as to prevent any practitioner undertaking more than he could properly accomplish, there was a self-denying ordinance limiting to 2000 the number of members whom any one medical officer could inscribe on his books. To prevent the abuse that was so largely prevalent at the dispensary a wage-limit of £1 10*s.* per week was imposed and no one was admitted as a member whose income exceeded this sum. The Public Medical Service has continued to prosper. Last year 2800 new members joined while 1840 lapsed, leaving a net increase of 960, which brings the total membership up to 12,572. The total amount of money collected was £2566; of this £581 were paid to the dispensing chemists, £305 to the collectors, and £1603 were divided between the ten medical officers who do the work of this institution. This is equal in round figures to 2*s.* 6*d.* net per annum and per member after the cost of management, of drugs, and of collecting has been paid. At this rate 2000 members would bring in a net income of £250 a year, and this is very generally considered quite as much club practice as any one practitioner should undertake if it is to be done properly and if sufficient time is left for practice among patients who can afford to pay the usual fees, for study, and for relaxation.

This self-denying ordinance, this limiting of club patients to 2000, is entirely in the interests of the public, and especially of the poor. Nothing can be more disastrous to the poor than that a medical practitioner should make the greater part of his income out of club practice. The calculations and figures given above show what this means, and, indeed, the poor themselves so well understand the question that the phrase "only a club doctor" is quite current among them. Therefore, when serious illness arises they endeavour to get money enough to consult a practitioner who is not a club doctor. It would be a great advantage to the sick poor if their club doctor derived the greater part of his income from patients who paid the full fees, for he would then be much better able to afford all the time necessary to take equally good care of his club patients. This also would better guarantee the dignity and honour of the profession, and hence the present struggle.

Unfortunately the members of the profession at Coventry have recently gone back upon some of their old and excellent resolutions. The spirit of compromise has been permeating their ranks, and for the sake of being practical they have forsworn some of their best principles. As a few practitioners in the neighbourhood had private clubs of their own with more than 2000 members, a resolution was carried raising the limit of members on any one practitioner's book to 3000. Then the other day, and in the hope that the five medical officers of the dispensary who have resigned would join, the self-denying ordinance

was abolished altogether. Thus the rule which constitutes the chief claim of the Coventry Public Medical Service to the support and sympathy of the general public has been abolished. There would have been some excuse for this if by so doing the medical officers who have given up the dispensary could have been induced to join; but this they will not do. They are going to run private clubs of their own and they think that their patients will leave the dispensary to follow them. Apart from this question of the popularity of the individual medical men, the patients will enjoy some advantages which they did not have at the dispensary. The medical officers are making arrangements to receive their patients at their own private surgeries, so there will not be the same crowding that occurs at the dispensary building where all the staff receive the patients. Then, instead of being able to see a given medical officer in the evening only on one day per week, preparations to receive their patients during five evenings in the week as well as every morning have been made by the medical officers who have resigned. As obviously some members will not leave the dispensary the five medical officers who have resigned will lose some of their patients. Therefore they will give longer hours for consultation to fewer patients. There is no denying that this will be a great improvement from the point of view of medical science on the one hand and of the patients on the other. But such is the vicious tangle into which the system has become involved that this improvement will not be effected without imposing on the medical officers concerned a considerable financial loss. The best chance of recoupment is that there will be less abuse and that some of the well-to-do members of the dispensary will now pay the usual fees.

If the facts of the case can be made known to the public at large the dispensary will be abandoned or radically reformed. The three newly appointed and imported medical officers will find themselves in a difficult position. At Coventry and at Birmingham the profession is absolutely united against them and their ostracism will be thorough and effective. Though the dispensary officers who have resigned had drifted, as explained above, into a false position all criticisms in regard to the past are in abeyance. An absolutely united front is presented to the common enemy. All the practitioners of Coventry have promised not to accept as club patients any member of the dispensary, so that these members must follow the medical officers who resigned or remain in the dispensary. By this means it is hoped that the loss of the officers who resigned will not be so great. This self-denying ordinance will last for 12 months so far as individuals are concerned and for two years in regard to the clubs that are affiliated to the dispensary. It cannot be said, therefore, that the practitioners of Coventry have urged a rupture with the dispensary in the hope of picking up some crumbs. Of course the hospital staff will have nothing to do with the dispensary and its imported medical staff and the same may be said with regard to the *personnel* of the Birmingham hospitals. When it was necessary to remove a dispensary patient to a hospital the dispensary medical officers, being on personally friendly terms with the staffs of the Coventry and Birmingham hospitals, could telephone and make arrangements for their patients. This is not possible now, for no communications will be held with the new dispensary medical staff. The dispensary patients must themselves negotiate with the hospitals; their medical attendants, if they belong to the dispensary staff, cannot help them. Such is the nature of the fight which will begin next quarter day when the five medical officers who have resigned will leave the dispensary and the three imported medical officers will take their places.

THE GERMAN SURGICAL CONGRESS.[1]

(FROM OUR BERLIN CORRESPONDENT.)

(Concluded from p. 1382.)

Treatment of Fractures of the Femur.

Professor BARDENHEUER (Cologne) said that in the treatment of fractures of the femur the obtaining of results which were satisfactory from the anatomical point of view was the best security for the future serviceableness of the limb. It might be concluded from the position of the fragments in a recent fracture whether a displacement was likely to occur and whether this might be avoided by prophylactic measures. In fractures of the diaphysis where the angle opened inwards the flexure became greater in course of time when the femur was subjected to much weight before the completion of ossification. On this account after a certain period the limb became shorter than it was immediately after the end of the treatment. The deformity must therefore be remedied as well as possible in the anatomical sense and the patient should not be allowed to leave his bed before three months. The prognosis of displacement where the angle of the fracture opened outwards was better and the case was the same in displacements in the longitudinal direction where subsequent shortening of the bones was less likely to occur. Professor Bardenheuer had devised an elaborate system of making traction in every case of fracture. When the fragments were displaced with an angle opening inwards he applied, in addition to the usual traction in the longitudinal axis, three other tractions—namely, one towards the middle line of the body, one at the place of the fracture, and a traction on each fragment towards the exterior. When the displacement was very great so that the fragments did not touch each other at all the traction must be made with a weight of 70 pounds. In 159 cases which Professor Bardenheuer treated in this way there was no shortening. In subtrochanteric fractures where the upper fragment was much flexed simple extension was not sufficient but downward traction made through a hole in the mattress must also be applied. In supracondylar fracture not only must extension be made in the longitudinal axis but upward traction must also be applied to the lower fragment and outward traction to the upper fragment. With regard to fractures of the neck of the femur Professor Bardenheuer has observed 14 different varieties for each of which a separate method of traction had to be applied.

Professor KÖNIG (Altona) discussed the indications for wiring the broken ends of the femur. Fractures of the diaphysis were, in his opinion, not suitable for the operation, except in the case where portions of muscles were interposed between the ends of the bone. The proper cases for wiring were fractures of the neck of the femur; it had been found post mortem that even impacted fractures of the neck where the upper fragment had entered the trochanter had become united by fibrous tissue only. This fact explained the shortening of the limb when the patient began to walk. The same was the case in intracapsular fracture, in which also a fibrous union only took place. He therefore recommended wiring in cases of fracture of the neck of the femur. He said that this fracture was not, as was commonly believed, peculiar to advanced life, but might occur in middle-aged persons and even in children. He alluded to the case of a tuberculous patient in whom a fracture had been wired and who died some months afterwards from pulmonary tuberculosis. It was found at the post-mortem examination that osseous union had taken place only on the anterior side where sutures had been applied but not on the other sides where only a fibrous union had taken place. Isolated fracture of the great trochanter was also an indication for wiring because of the liability to serious loss of function in the event of union being imperfect. As to subtrochanteric fractures, those which were transverse might be treated by simple traction, while for those which were oblique Degage's splints were the best treatment. Traction was also sufficient in supracondylar fracture, except when there was traumatic loosening of the epiphysis, as in these cases the diaphysis was displaced backwards and might lead to gangrene by compression of the popliteal vessels. As material for suture Professor König preferred aluminium bronze wire and recommended that the patients should keep their beds for ten or 12 weeks.

Professor SCHLANGE (Hanover) said that in fractures of the diaphysis of the femur he had sometimes made the fracture accessible by an operation and replaced the ends of the bones in proper position without wiring. The external wound was then sutured, the thigh was fixed in a plaster-of-Paris splint, and firm union without deformity was obtained.

Dr. NIEHANS (Berne) recommended that the ends of the bones should be temporarily fixed by pegs, which were subsequently removed under local anæsthesia by cocaine. This proceeding was especially valuable for children whose restlessness was unfavourable to firm union taking place.

The Treatment of Enlarged Prostate.

Dr. KÜMMELL (Hamburg) said that in his opinion complete enucleation of the gland was preferable to partial

[1] For this report we wish to tender our sincere thanks to the editor of the *Deutsche Medizinische Wochenschrift*, through whose courtesy it has been forwarded to us by our Berlin correspondent.

extirpation. With regard to the time when an operation should be performed he said that it was not necessary in the first stage but only when residual urine was left notwithstanding catheterisation, and especially when cystitis or hæmorrhage had set in. An operation was contra-indicated in arterio sclerosis, in renal insufficiency, in Bright's disease, and when the bladder had completely lost its contractility. The mortality after the operation was 10 per cent. Suprapubic cystotomy was as a rule preferable because it allowed a better view of the bladder for the detection of diverticula and calculi. It did not lead to fistula, to impaired control of the bladder, or to impotence, all of which were frequent sequelæ of perineal operations. The perineal operation was advisable only in cases of extreme obesity and prominence of the rectum. Among 41 operations performed by him there were nine in which cancer was present and the mortality of these was 33·3 per cent. After the operation micturition was under the patient's control and the urine could be retained for a period of from four to six hours. Strictures, however, sometimes developed subsequently. The operations were performed under spinal anæsthesia obtained by Professor Bier's method. When the bladder had been opened the prostate was pressed forward by a finger introduced into the rectum and a circular incision was made round the entrance of the urethra; the gland was then enucleated, the prostatic portion of the urethra being preserved as much as possible. When the bladder was not infected the mucosa and the walls of the bladder were sutured, the abdomen was closed, and a catheter was tied in.

Professor RYDYGIER (Lemberg) advocated an early operation. He said that he had always performed a perineal operation without opening the urethra. He made an incision on both sides of the capsule and then enucleated the gland, preserving, however, two long strips of prostatic tissue about one centimetre thick at the external side of the urethra. He had never found that his operations resulted in either fistula or impotence and his patients were able to leave their beds on the second or third day.

Professor ISRAEL (Berlin) said that owing to the high mortality of the operation he only performed it when the patients were no longer relieved by catheterization. He had always used the suprapubic operation even in very fat persons. As he had once seen profuse secondary hæmorrhage occurring after the lapse of a fortnight he always introduced a drainage-tube and left the wound of the bladder open.

Professor ROVSING (Copenhagen) recommended a more conservative proceeding. He opened the bladder only when there was profuse hæmorrhage or when there were calculi or when catheterisation was not possible; he only removed parts of the gland and was opposed to the total removal of it because serious mental aberration, leading even to suicide, had been found to occur after total removal. He had treated cases with complete success by vasectomy. In severe cystitis he made a small incision into the bladder, introducing a catheter, by which the bladder was irrigated with a solution of silver nitrate.

Dr. PAYR (Gratz) said that he had performed prostatectomy twice under local anæsthesia. Enucleation was very easy when the connective tissue was loosened by injection of the anæsthetic fluid between the capsule and the body of the prostate.

Cancer of the Bladder.

Professor ROVSING said that he had performed total removal of the bladder either when there were multiple deposits of cancer or when a considerable area of the wall of the bladder was attacked by the growth. Metastases in the lymphatic glands occurred rather late. In operating he made a curved incision through the skin and the muscles of the abdomen. The bladder, which was filled with 250 grammes of antiseptic fluid, was not opened, but was enucleated first on the anterior, then on the lateral, and finally on the posterior aspect. The ureters were divided two centimetres above their entrance into the bladder and were left hanging externally through two lumbar incisions.

Resection of the Liver.

Dr. ANSCHÜTZ (Breslau), in giving some account of the methods followed in resection of the liver, said that the hæmorrhage might be checked in various ways. In one style of operating the affected parts were quickly removed by free incisions; the bleeding surface was temporarily compressed by assistants and all the bleeding points were successively tied. Another plan was to make a preliminary application of ligatures in each region and then to cut the tissue slowly. It was essential to have a good view of the field of operation. He preferred temporary resection of the ribs to the transpleural method. Below the seventh rib the pleura was no longer met with if the incision was made on the cartilaginous part; below the tenth rib even the bone might be cut through. In resection of a wedge-shaped piece of the liver the cut surfaces that were left must be cautiously united by sutures, after which the abdominal wound was closed.

Abscess of the Spleen.

Professor KÜTTNER (Marburg) said that abscesses of the spleen might be caused by mechanical injury, by septic infection, or by infarcts in malaria, in enteric fever, in puerperal fever, and in ulcerative endocarditis; they might also be caused by direct contact in cases of perforation of the stomach. When it was found that subphrenic abscesses of the left side contained pieces of tissue among the pus it must be suspected that they proceeded from the spleen. Professor Küttner described a case in which the spleen had been removed on account of a gunshot wound and in which an examination made after the patient's recovery proved that the number of the red corpuscles had increased to 6,000,000 per cubic millimetre and that the hæmoglobin had increased to 129 per cent. He showed a patient suffering from myelogenic leukæmia whose spleen he had removed. It was moveable and enormously enlarged. No effect was produced on the leukæmia and no benefit was obtained from treatment by the x rays.

Gangrenous Hernia.

Dr. RINDFLEISCH (Stendal) said that in operating on gangrenous hernia he had used a method of invagination devised by himself. After detaching the mesentery from the gangrenous intestine the latter was compressed by Doyen forceps at the boundary between the gangrenous and the healthy parts and was then invaginated. The serosa of both parts was then united by sutures, after which the gangrenous portion was spontaneously thrown off.

Torsion of the Omentum.

Dr. ADLER (Pankow) reported a case of supposed appendicitis in a hernial sac which he had operated on. When the sac was opened omentum containing extravasated blood was found in it. Laparotomy was thereupon performed and showed that the omentum as far as the transverse colon had become twisted on itself so as to make a complete revolution. The omentum was removed and the patient recovered.

Meningitis Serosa Spinalis.

Professor KRAUSE (Berlin) said that among 20 patients who had presented symptoms suggesting spinal tumour and had been operated on by him he had eight times found within the spinal arachnoid circumscribed collections of fluid, which at the operation escaped in such a way as to show that it was under considerable pressure. These collections must have originated by inflammatory adhesions between the dura mater and the pia mater. The paresis of the limbs and the difficulties which had been experienced with the bladder and rectum disappeared after the operation. In Professor Krause's opinion these cases proved that meningitis serosa spinalis had a real existence.

Election of President.

Professor VON EISELSBERG (Vienna) was elected as President of the Congress at its next meeting.

FOOD AND THE HEALTH OF THE NATION.—The members of an association known as the Bread and Food Reform League have arranged to hold a meeting at the Mansion House on June 26th to inaugurate a campaign designed to spread—without advocating any special system of diet—scientific and practical information about healthy and economical foods. The prevention of adulteration will also be in their scheme for insuring that the nation may have well-fed, healthy children. The Lord Mayor, who will take the chair, is to be supported by, among others, the Marchioness of Ormonde, Sir James Crichton-Browne, Sir John Jardine, Sir Walter Vaughan Morgan, Sir William Ramsay, the Rev. Prebendary Carlile, Mr. A. Pearce Gould, Dr. G. A. Heron, Mr. Mayo Robson, Sir William J. Collins, and Sir Alfred Fripp, and representatives of societies interested in promoting the welfare of the people. Tickets and further information may be obtained from Miss May Yates, honorary secretary, 42A, Bloomsbury-square, London, W.C.

SOME TURKISH LAZARETS

AND OTHER SANITARY INSTITUTIONS IN THE NEAR EAST.

BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.

(With Reproductions of Photographs taken by the Author.)

V.[1]

THE CAMARAN LAZARET (*continued*).

The Three Water Services: (a) Sea-water Supply; (b) Fresh-water Supply—the Distilling Apparatus, Central and Peripheral Reservoirs, Mode of Distribution, and the Ice Machine; and (c) Well-water Supply.—The Two Existing Method of Excreta Disposal: (a) The Motte System—Latrines, "Collectors," Cesspools, Pumps, Excreta Tanks, and "Jetée de Vidange"; and (b) Latrine Jetties on the Sea-shore.—Defects of Both Systems—New System Proposed.—Trough Closets with Automatic Flushing-tanks; "Fosses à Fond Perdu"; Experimental Observations.

THERE are three water services in the Camaran lazaret: (*a*) sea-water, (*b*) fresh-water, and (*c*) well-water. Each of these services has one or more systems of pipes, by which the water is distributed to different parts of the lazaret.

(*a*) *Sea-water service.*—Sea-water is distributed to all the cordons to supply the latrines, to the disinfecting pavilion for the baths, and also to the distilling apparatus and ice-machine. There are two separate sea-water services: one for the first, second, and third cordons, and the other for the fourth, fifth, and sixth cordons. Each has a powerful pump which raises the water to a large central reservoir. These reservoirs are placed at the top of water-towers; the water-tower for the three further cordons is seen in Fig. 5 (No. III.), whilst a similar, but lower, tower, near the machinery buildings, supplies the first three cordons. From the central reservoirs the water flows to smaller reservoirs on lower towers, one of which exists in each cordon. All the reservoirs are built of armoured cement; the pipes are of cast iron. In the cordons themselves smaller pipes of the same material distribute the water to the latrines. The two "central" reservoirs can hold respectively 20 and 19 tons of sea-water; those in the cordons can hold about ten tons each.

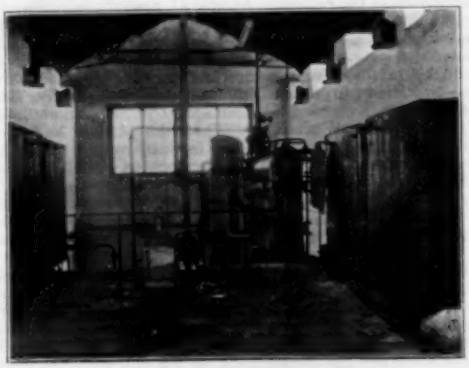
The concentration of the lazaret will involve the abandonment of the sea-water service for the three further cordons as it now is. The Commission proposes to put up one large central reservoir of 50 tons in place of the 20-ton reservoir near the administrative buildings which now serves for the first three cordons, and to have one system of piping for all the six cordons. Both pumps would be housed close by the new large reservoir. By taking up the pipes which cover the long distances between the three further cordons in their present positions, the lazaret will have something like two kilometres of piping in reserve. It is further recommended to provide all the reservoirs with ball-taps, permitting of their automatic filling, and with water gauges.

(*b*) *Fresh-water service.*—The drinking-water at Camaran is provided by a distilling apparatus, which converts sea water into excellent fresh water. The machine was bought from the firm of Mirrlees, Watson, and Yaryan of Glasgow in 1895. The total cost (including the distilling apparatus itself, transport, mounting, boilers, and other accessories) was about £4000. It has given excellent results. It produces about 26 tons of fresh water in a day of 12 hours; working day and night it can produce as much as 60 tons in the 24 hours. The amount of coal burnt varies with the quality; on an average a ton of water can be furnished by burning about 45 kilogrammes of good Cardiff coal, whereas of Indian, Newcastle, or Turkish coal it requires 60 kilogrammes to produce the same quantity of water.

Distilled water is given gratuitously to the pilgrims, to the staff of the lazaret, to the local postal and customs authorities, to the crews of the Turkish stationnaires, to the officers of the military guard at the lazaret, to all workmen or employees, to ships in quarantine (if asked for), to government transports, to the military hospital, and to the staff of the Camaran arsenal. It is also distributed to the ice machine, to the generators of all the machines, and to the disinfecting stoves; and finally, a certain amount is sold on the island or on the mainland. The price is 60 piastres (10*s.*) a ton. The quantity of distilled water allowed to each pilgrim is five litres a day, to each unmarried member of the staff ten litres, and to each married member 20 litres.

From the distiller the water passes to 16 large reservoirs, eight of which are in the machinery building itself (see Fig. 14) and the other eight are placed in the curious structure which appears in Fig. 15. The basis of this structure

FIG. 14.



Fresh-water reservoirs in the machinery building.

is of very solid masonry and was originally intended to store the ice made in the ice machine, to which I shall refer presently. As a matter of fact, ice is never stored there, as it is distributed as rapidly as it is prepared, but the whole structure is still often called the "*dépôt de glace.*" The eight iron reservoirs, four small and four large, are supported on very thick masonry walls and are covered over with a roof

FIG. 15.

Fresh-water reservoirs over ice depôt.

of matting and palm-leaves, which protects the water from the sun's heat. The whole has rather a droll appearance but is none the less a very practical and successful arrangement.

From the eight reservoirs in the machine building itself the water passes to a filter outside, below which is another small reservoir with tap attachment. From here a five-centimetre pipe conducts the water right to the end of the Mervani landing-stage, where portable tanks can be filled and the water thus conveyed to ships that require it. The water from these reservoirs is also distributed to the staff of the lazaret, to workmen and employees, and, in short, to all

[1] Nos. I., II., III., and IV. were published in THE LANCET of April 27th (p. 1138), and May 4th (p. 1251), 11th (p. 1317), and 18th (p. 1389), 1907, respectively.

the persons other than pilgrims mentioned above. Some of it is even, under existing conditions, carried to the three further cordons of pilgrims; but that, as will be shown, was not originally intended to be the case and has been necessitated solely because the water does not flow freely to those cordons in the piping provided for it.

From the eight reservoirs over the so-called "ice depôt" two pipes conduct (or should conduct) the water to the six cordons for the use of the pilgrims. One is a pipe of five centimetres (about two inches) and distributes the water to cisterns in the first three cordons; the other is a pipe of six centimetres and is intended to distribute the water to the last three cordons. But for some reason that has not been satisfactorily explained the water has never reached these distant camps or has reached them in extremely small quantity. No doubt the long distance the water has to flow, and the fact that some of those camps are on rather high ground, increases the difficulty which the water finds in reaching them; but in the opinion of an engineer who accompanied the Commission there is a sufficient difference in level between the central and peripheral reservoirs to allow of a free flow, and he ascribes the difficulty to some serious obstruction of the pipes. He suggests that in all probability, when the pipes were first laid down, a careless workman in soldering them up allowed a quantity of lead to run into the interior at one or more joints and that this has caused the obstruction. The explanation is a very probable one and is supported by the fact that the obstruction has existed from the time the pipes were laid down. The only way to prove or to disprove the truth of this assumption would be to examine every joint, but as the Commission proposes in any case to do away with this second piping and have a single system of pipes for all six cordons the question ceases to be of practical interest, save as indicating the necessity of care in future and of supervision of the workmen employed to lead the joints.

In suppressing the second system of fresh-water pipes a vast quantity of these pipes (over five kilometres) will be set free; some will be needed for continuing the first system to the three further cordons and the rest can be employed to conduct water to the hospitals, to the houses (new and old) where the staff is lodged, and elsewhere.

In the camps themselves it was originally intended to stock water in large underground cement reservoirs, and such a reservoir was constructed in each cordon. They vary in size; some are large enough to hold 30 or 40 tons of water. But they have never been used as originally intended. Iron cisterns were ordered, and these have in many instances been placed inside the cement reservoirs. The Arab employee has to descend a flight of steps to the bottom of the underground reservoir and fill the pilgrims' water-jugs from a tap in the iron cistern. The arrangement is not a satisfactory one; the bottom of the reservoir is always damp and has often an unpleasant smell; there is little room between the walls of the reservoir and the cisterns; and the employee fills the pilgrims' receptacles in semi-darkness and away from all control by any higher functionary. For these reasons the Commission proposes to place the iron cisterns above ground in all the camps, in a position where the medical man in charge can control the operation and to cover the cisterns with a mat and palm-leaf roofing to protect them from the sun. This method has already been adopted in one of the cordons and has given excellent results.

In the further cordons, as already stated, though the reservoirs exist, no (or little) water reaches them. Water is therefore carried in tanks on wheels, which are pushed by Arabs along the Décauville railway from the central reservoirs to the camps. This method involves much labour and expense; the water risks getting contaminated, and it becomes unpleasantly heated by the sun. One of these portable cisterns, under a tent, is seen in Fig. 16; the photograph was taken at the fourth cordon.

The Commission recommends that all the reservoirs, central and peripheral, should be provided with ball-taps and overflow pipes. By the side of most of these charcoal and sand filters already exist.

The water is distributed to the pilgrims twice a day—morning and evening. Each pilgrim receives a small metal tally, giving him the right to two and a half litres (rather more than half a gallon) twice daily. Before going on to describe the third system of water-supply (well-water) it will be convenient to mention the ice machine.

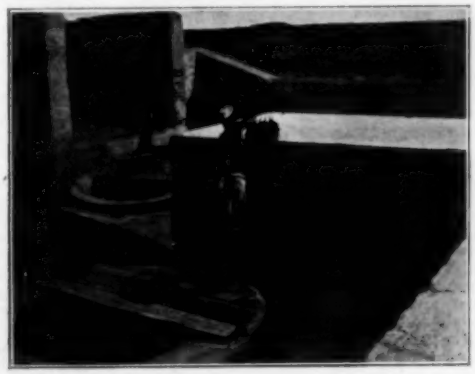
The ice machine.—This was bought from the firm of de Nayer, of Brussels, in 1896. It is installed in the same building as the distilling apparatus. It can produce 1200 kilogrammes of ice in 12 hours, or 3000 in 24 hours; ordinarily it works about 11 hours a day in the pilgrim season. The ice, which is of excellent quality, is given gratuitously to most, if not all, of the persons mentioned above as receiving free rations of distilled water. It requires about one and a third tons of coal to produce a ton of ice.

FIG. 16.

Moveable water tank under tent at the fourth cordon.

(*c*) *Well-water supply.*—In a very picturesque oasis in a valley lying to the north-west of the village of Camaran there are a score or more of wells of different sizes and depths. Seven of them supply a certain amount of water to the lazaret, while the rest furnish the village with their sole drinking-supply, and morning and evening a stream of camels and donkeys may be met, carrying the water in empty petroleum tins or in skins. The seven wells that furnish the lazaret have been at some time surrounded by walls and a rather elaborate arrangement of filters and reservoirs has been constructed in their neighbourhood. These have for the most part fallen in ruin. The enclosure round the wells nevertheless remains and a masonry tank, in which the water deposits some of its grosser impurities, is still in good condition. Some of the wells, the enclosure, and the tank are seen in Fig. 17. The tank is laboriously filled from the wells by Arabs who use for the purpose a primitive leather receptacle, as shown in the illustration. It is proposed to put up one or more pumps which will render the process easier and speedier. From the tank a five-centimetre pipe conducts the water down the valley to stand-pipes, situated near the brick-fields (to be mentioned later), which is the

FIG. 17.



The wells. Arab filling reservoir with well water.

nearest part of the lazaret. The whole distance is about one and a half kilometres.

The quality of the well water varies, it is said, greatly. There is apparently communication between the wells and the sea, as when the tides are exceptionally high the well water becomes quite salt. After long drought, when the water level is low, the water is often muddy and brackish, but after rain, and when the level is high, it seems to be of by no means bad quality. When tasted in January last it was quite sweet and pleasant to the palate, but it was impossible to analyse it. This water is used by the employees of the lazaret for washing clothes, for watering gardens, for baths, and similar purposes. Before the distilling apparatus was put up it was the sole supply of the lazaret, but the quantity proved insufficient and the quality too uncertain and variable.

The proper disposal of excreta is one of the most difficult problems that an institution such as a large lazaret presents. Two systems are at present in action at Camaran and neither has given very satisfactory results. They are (*a*) what is known as the Motte system and (*b*) a system of latrine jetties on the sea beach.

(*a*) *The Motte system* is composed of a series of small houses containing the water-closets; drains or "collectors" which convey the excreta to the cesspools; cesspools just outside the cordons; a pump to empty the cesspools; receptacles on wheels into which the excreta are pumped; and, finally, a jetty where the excreta are emptied into the sea. The houses, each of which contains two latrines, are built of brick, covered with plaster, with tile roofs. Most of them are in a bad state, the plaster having more or less completely fallen, and the bricks, thus exposed to the air, tend to crumble to pieces. The latrines ("*à la Turque*") consist of a mere hole in the stone flooring of the hut; such latrines are in use in all Moslem countries. To work well it is essential that the stone should be sloped and grooved so

FIG. 18.

The Motte system at work; bringing the pump and tanks to the cesspool.

that all liquids and solids are carried to the hole. This precaution was not taken at Camaran, and in some instances the floor actually sloped away from the hole and liquids flowed out under the door. A tap of sea-water exists in each latrine, but it opens horizontally and a strong jet of water spirts against the opposite wall covering the occupant with its splashes. A valve was inserted under each hole, working on a pivot with a counter-weight, but these soon became ankylosed with rust and ceased to work.

The "collectors" are large pipes, constructed of brick, covered with cement. Their external diameter is 60 centimetres and their internal diameter 35 centimetres. A pipe of this nature and size is disproportioned to the work it is intended to do; it would require an immense flush to keep it clean, whereas at Camaran the only flush is the small quantity of water used by the pilgrims for their ablutions. It is possible, also, that the internal surface of the collectors was never wholly smooth, being made of brick. As a result many of them became completely blocked and had to be broken open for cleansing. The defects both of latrines and collectors were indeed so serious that the lazaret authorities have had to close many of them and the pilgrims have to go to the latrine jetties, to be described later.

The cesspools, of which there are from two to eight at each cordon, appear to have been well constructed. They are lined throughout with stone, covered with cement, and are intended to be water-tight. Their covers are either of brick or of armoured cement. Their chief defect is the absence of a ventilating pipe, and as there are no traps on the collectors, and the valves under the latrines do not work, the gases escape from the cesspools into the latrines. The pilgrims complained much of the odours thus caused, which could be smelt not only in the latrines themselves but also in the arishes situated at all near the latrines.

The pump and excreta tanks ("*wagons-tinettes de vidange*") are seen in Figs. 18 and 19. A glance, indeed,

FIG. 19.

The Motte system at work; wheeling the excreta tanks to the jetty.

at these illustrations gives a better idea than any description of the process of emptying the cesspools and conveying their contents to the sea. Each tank holds a ton of liquid; it requires from 25 to 30 minutes pumping to fill it. The tanks are pushed by Dankali natives along the Décauville railway to a jetty on the shores of a bay to the north of the last cordon, where their contents are emptied into the sea. This jetty, known as the "*jetée de vidange*," is seen in Fig. 20.

FIG. 20.

Jetty for disposal of excreta.

The principal disadvantages of the Motte system as adopted at Camaran are the following. The latrines, collectors, and cesspools have the serious defects pointed out above. The process of pumping up the contents of the cesspools involves the use of indiarubber pipes with metal

joints. The indiarubber soon deteriorates in a tropical climate; the joints, moreover, are with difficulty kept water-tight (by constantly plastering them over with putty); a vacuum is thus formed only with difficulty; some of the liquid escapes at the joints, and a still larger quantity falls on to the ground when the operation is over and the pipes are unscrewed. The same liquid tends to drip from the tanks themselves during their long transit to the sea. From the first cordon to the jetty is about three miles and this distance has to be traversed many times to empty all the cesspools. The natives dislike the task extremely, and there is no doubt that the work is both very laborious (particularly with a badly laid railway track) and very unpleasant. More than once the natives have threatened to strike altogether.

(*b*) *Latrine jetties.*—Owing to the practical failure of the system above described it was soon found necessary to run up temporary jetties on the seashore with latrines at the end, while the whole question of excreta removal could be re-studied and some better and more permanent system found. The character of these jetties, of which there are three in front of each of the first three cordons, is seen in Fig. 21. They are simple wooden structures with matting

FIG. 21.

A latrine jetty on the seashore.

enclosures at the end. The results they give are very unsatisfactory and unpleasant. The tide goes out a long way beyond their ends, and it is only for a short period before and after high tide that they have water under them. The effect can be imagined and need not be described. But it must be added that, as the pilgrims bathe in the sea in the near neighbourhood of these jetties, the condition is one that is likely to be as dangerous as it is certainly unpleasant. These jetties should disappear as soon as the new system proposed by the Commission is introduced.

New system proposed.—The Commission recommends the introduction at Camaran of a system of trough closets with automatic flushing tanks. There should be four chalets in each camp of average size, each chalets containing five closets, or 20 in all. It is unnecessary here to describe the details of this kind of closet, so well known to English sanatarians in all parts of the world, but practically unknown in this country. The report of the Commission describes the arrangement in full detail and that of the engineer who accompanied the Commission is illustrated with plans and sections. An arrangement of this kind is probably the most satisfactory one that can be suggested where latrine accommodation has to be found for large numbers of relatively uncivilised persons, as most of the pilgrims are. It requires, it need not be said, to be properly installed in the first instance, and a certain amount of care and attention are necessary to keep it in good working order.

For the ultimate disposal of the excreta it is recommended that a trial should be given to absorbing cesspools—that is to say, to cesspools with unlined bottoms, by which all the liquid portion of the sewage can be absorbed. Such cesspools ("*fosses à fond perdu*") would obviously be undesirable in an ordinary town or village and it is only on account of the exceptional conditions prevailing at Camaran that it becomes possible to approve of their use. To begin with, the lazaret is an isolated institution occupied for only about four or five months in the year. During the rest of the year the soil, which would otherwise become permanently fouled, has time to purify itself completely by natural processes of oxidation or nitrification. The soil is, for the most part, an absorbent sand; hard rock occurs here and there, but apparently strata of sand can always be found if the rock be penetrated to a few yards' depth.

In order to ascertain the absorbent power of the soil the Commission caused two such pits to be dug, one near the first cordon and the other near the second. Near the first cordon nothing but sand was met with; near the second (which lies high) alternate layers of rock and sand were found. Measured quantities of fluid—both pure sea-water and sewage from the existing cesspools—were poured into these experimental pits and the time taken for their absorption was noted. The results (the details of which are fully set forth in the Commission's report) were very satisfactory. In some of these experiments eight or ten times the amount of sewage likely to enter any one of the cesspools in 24 hours were poured into the experimental pits at the second cordon (the one offering the least favourable conditions) for days together, without the bottom losing its absorbent power. Apparently (certainly at the pit near the first cordon) the sea-water at high tide infiltrates to the bottom of the pit, and as the tide descends a marked suction action is set up and most or all of the fluid contents are thus absorbed.

The ultimate fate of the solid portion of the sewage is a problem of some interest. Cesspits of this kind exist at the lazarets of Suakim and of Tor (at present only for the hospitals and some other portions of these establishments, and it is proposed now to introduce them also for the pilgrims at Tor). Experience there has shown that the solids disappear in a remarkable manner and the pits rarely, if ever, require cleaning out. By the side of some of the pits water-tight cesspools have been constructed in which the sewage deposits most of its solids before flowing into the absorbent pits, but even these "almost never," it is said, require cleaning out. At the village of Camaran also such absorbent pits are in use in most of the better-class Arab houses. I examined several of these and was not a little struck by the complete disappearance of the solids from them. At one house, for example, which had been continuously occupied for five years by an Arab family, the cesspool (only one and a half metres deep) had never required cleaning during the whole of that period. At another, which had been occupied for five and a half years and only evacuated two weeks before it was inspected, I had the cesspool opened up. It was only about a metre deep yet there was not a trace of solid matter in it, and it was entirely odourless. Whether equally satisfactory results will be obtained with the larger pits and the more numerous population represented by the lazaret (when full) only experience can show; and the Commission proposes therefore to try it first at one of the cordons only before introducing it in all. The cesspools will be about two metres in diameter, and from two to three metres deep, according to their position and the nature of the soil. They will be about 20 metres (65 feet) away from the latrines and outside the cordons; their walls will be lined with masonry without mortar for about a metre from the bottom, and with mortar for the rest of their height; they will be covered with a cement vault with a manhole in it. They will be ventilated by a pipe carried up well above the roof of the latrines.

There are no surface springs or wells to be contaminated by infiltration from these cesspools. The lazaret is supplied, as already shown, with drinking water distributed in closed pipes, which lie for the most part on the surface of the soil. Care will be taken that these pipes occupy a higher position (i.e., further from the sea) than the cesspools, so that even if they should leak there should be no possibility of the contained water being contaminated.

It may confidently be hoped that this new system of latrines and excreta disposal will give better results than does that now in use. All manipulation of the sewage matter will be avoided as it will be disposed of automatically. The wearisome and unpleasant task of pushing sewage-laden tanks for many miles under a tropical sun and on a badly laid railway track will no longer be imposed on the unwilling natives. There will be no pumps or indiarubber tubes to get out of order and leak, and liquid sewage will not, as at present, escape on to the surface of the soil near the cordons or be sprinkled on the railway track from one end of the lazaret to the other.

(To be continued.)

THE BASLE MODEL MUNICIPAL ABATTOIR.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Continued from p. 1389.*)

THE slaughter hall for pigs at Basle is as carefully built and organised as is that for the large cattle. The flooring and the walls are made of the same non-absorbent, glazed, and washable materials. But there are different appliances. Thus with pigs the removal of the bristles necessitates a special process. Here, as in most other places, the scalding process is adopted. Within the slaughter hall there are two railed-off compartments or pens which can contain a batch of pigs brought in from the outside to be slaughtered. After these have been killed in the usual way there are revolving cranes ready for use and close at hand. The body of the pig, fastened to the pulley chain, is lifted from the ground; the crane makes a half turn and then lowers the dead animal into a tank containing boiling water. When it has been scalded enough to loosen the bristles the crane raises the body out of the water and deposits it on the long plank tables where the bristles are scraped off. The large open tanks of boiling water naturally give off a great deal of steam, especially in winter, and as this does not readily dissolve in the air or float away a nuisance would be caused unless suitable arrangements were made. Therefore, a large shaft has been fixed near the ceiling with inlets descending closer to the tanks. Hot air is propelled through the shafts and as there are apertures every 30 feet the colder steam and air of the slaughter hall are drawn away into the shaft. On the opposite side of the slaughter hall and along the whole length of the wall there is a row of enamelled sinks about one foot deep. Above each sink there is an ingenious arrangement of taps—one for hot and one for cold water, and a third that provides a mixture of hot and cold water. It is here that the intestines are washed out. The bulk of the foul contents is emptied into metallic receptacles standing on wheels that are placed by each sink and then the gut is washed. Underneath these sinks the floor takes the form of a gutter or open drain, so that anything spilt or splashed or any dirt which accidentally falls on the floor is readily and rapidly washed away. As a result, and though this is very dirty and unpleasant work, there is little or no odour to be noticed.

The water, of which a very large quantity is required, is pumped up from a well dug to a depth of 18 metres, this being two metres, or rather more than six feet, below the level of the bed of the Rhine. Some 70 hectolitres are pumped up per hour. There is a large cold-water reservoir and another in which the water is warmed by steam. To do this pumping and all the other work for which mechanical power is needed there is a steam engine of 125 horse-power. This is used not only for pumping and ventilating and for compressing carbonic acid gas but also to set in motion some American meat-cutting machines. All this is a great convenience to the trade. Pork butchers and others not only avail themselves of the steam power and perfected machinery to make their sausage meat, but instead of taking it all to their shops, where it would soon go bad, they only carry away just enough for their immediate needs and come every day for a fresh supply, leaving the rest in the cold storage where it can be preserved indefinitely. At the same time all this meat is watched, and should any of it go bad or prove not to be good it is at once confiscated. So complete and excellent are all the appliances that skilful men can kill and dress a pig and send it away out of the slaughter hall in 20 minutes. As there is room enough in this hall to kill 60 pigs at the same moment, and though rapidity is not the object held in view, it will be seen that nevertheless the work can be done very promptly and quite quickly enough for all practical purposes. Indeed, it is accomplished with so much greater celerity than would be the case in a private slaughter-house that the time and trouble saved must go a long way towards paying for whatever expense may be caused by the abolition of private slaughter-houses.

A long time ago[1] I described the Berlin cattle station, but that at Basle, though much smaller, is even more perfect in its arrangements. First, I should remark that the site for the abattoir has been well selected from the point of view of isolation and yet of accessibility. On the north-east side there is the Rhine, and the dwellings on the opposite side of the river are more than 200 metres away. To the south-east there is a garden and the remnant of an old rampart and these are inalienable State property. On one side only are there any dwellings, and these are for the most part inhabited by workers at the abattoir. The rest of the surrounding space is occupied by large warehouses. Then the ground, though close to the Rhine, is some ten metres above the river, so there is a good fall for the drainage and no fear is entertained of back currents of sewage or sewer air.

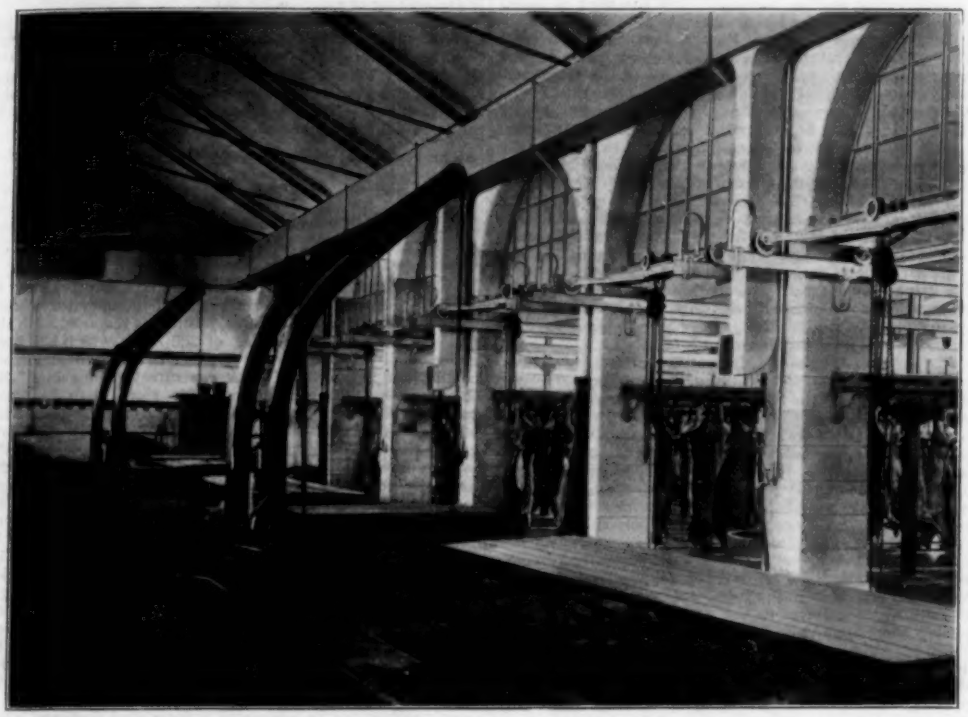
Along the Rhine embankment there is a carriage way with a row of trees, next comes the railway siding, and then there are the slaughter-house grounds. Here, where the cattle vans stop, the whole of the space between the railway metals is built in a concave manner and carefully cemented, and there is a drain under the line. The inlets to this drain are, of course, in the centre and immediately under the middle of the cattle vans or railway carriages. Thus anything falling is drained away and does not sink into the earth. At Basle a landing platform has been carefully built so as to be on just the same level as the floor of the railway cattle vans, and the animals are thus able to step from the van on to the platform with the greatest facility. The platform is, of course, absolutely watertight, being made with paving stones and asphalte between them. At both extremities of the platform there is a fire hose which sends powerful streams of water on to the platform to wash everything away after each arrival of animals. There is an ingenious system of iron bars and railing for the separation of the cattle and other animals. And the vans are strewn with a sandy earth, which is preferable to straw, as the latter when wet becomes very slippery.

Near the railway siding is a large and model pig pen or stable. In a little outer building there is a cemented and railed-off corner where the pigs are placed on arriving. Here they cannot escape from a strong jet of water which is played upon them till they are thoroughly cleansed. It is only after they have satisfactorily terminated their toilet that they are admitted into the larger building. Within there are numerous partitions. All these railings and gates are, of course, of iron. There are double hinges, so that the doors or gates open both sides, and very ingenious contrivances are used to compel the pigs to go precisely to the partition or pen that has been allotted to them. Granulated porcelain tiles, carefully cemented together, cover the whole flooring. The floor is nowhere absolutely flat but there is a slight slant, so that all liquids drain into a sort of gutter which surrounds all the pens. This gutter is covered with an iron grating. This is found more practicable than a drain-pipe underground. The iron grating can be lifted off, straw or other impediments removed, and the drain itself scoured or brushed and kept thoroughly clean. There is thus no danger of a stoppage in the drains. The pigs are fed from iron troughs which can be filled from the outside by partially lifting a railing in a slanting direction, so that the swill can be poured in without letting the pigs escape. By a crank and windlass arrangement all the windows on one side of the building open simultaneously when a handle is turned. At one end there are boilers in which to cook the pigs' food and serve it hot—at least in winter. Finally, when the pigs are conducted from this ideal abode, where they spend the last days of their existence under the most comfortable and hygienic conditions, there is no need to drive, to push, or to beat them. Passages made by iron railings conduct them to the pen within the slaughter hall. They have no choice as to the road; they must go forward, slowly or quickly; the slightest urging from the attendants suffices to lead them to the final stage of their life's journey.

Near the pigs' pens there are stables for cattle, the quarantine station is at the frontier which is so near and where the cattle on arriving are examined by the veterinary surgeons who detain suspicious cases. This stabling within the abattoir premises is placed opposite the railway siding where the ground becomes narrower. In the broader space there are various large buildings, the largest and central one of which contains the engine and boiler rooms with all the cooling and ventilating machinery, and the cold storage adjoining. On one side of this big block is the model pig slaughter hall and on the other side is the model slaughter hall for cattle. Opposite these fine buildings there remains the old

[1] THE LANCET, July 14th, 1894, p. 101.

FIG. 4.



The Basle municipal abattoir. The slaughter hall for pigs. On the left are the iron railings which constitute the pen where the living pigs are brought in. The revolving crane, the circular tanks for scalding, and the tables for scraping off the bristles are close at hand. The metallic ventilating shaft is suspended over the arches, while the inlets for drawing off the steam and air are fixed against every alternate pillar.

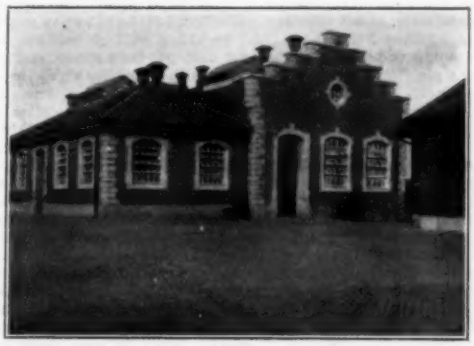
slaughter-house, perhaps just so as to show "how not to do it." It consists of long pavilions divided into small compartments where each butcher could work in private. These portions of the buildings are hardly ever used and will doubtless be pulled down to make room for better structures when the need for enlargement makes itself felt. Then there is also a separate building for the killing of sheep and calves about which nothing special can be said, but the disposal of the by-products merits special notice.

First and foremost there is the important fact that a special structure has been built exclusively for the emptying of the stomachs and larger intestines. The photograph (Fig. 5) which I was able to take illustrates the system. The little structure when approached from the abattoir yard seems to have but one floor with an area and a basement; but if viewed from the outside or from the Rhine embankment it is seen to have two storeys. In the floor above are great stone troughs in which the contents of the larger intestines and stomachs are emptied and this material falls into tank carts that stand ready underneath. When one of these

FIG. 5.

The Basle municipal abattoir. Exit outside the abattoir grounds from the special building or emptying the stomachs and larger intestines. The tank carts receive the visceral contents from above.

FIG. 6.



The Basle municipal abattoir. The tripe-preparing department. Calves' heads, sheep's feet, &c., are boiled in the smaller building to the left. The open louvre windows, the lantern ventilators, and patent cowls on the roof are supplemented inside by air shafts and motor fans.

tanks is full it is closed, the horses are brought out of the neighbouring stables harnessed, and the tank is taken away. It will be noticed that these tank-carts are outside the slaughter-house premises, though they are filled from within. They therefore do not enter that part of the abattoir where the meat is conveyed out of the slaughter-house, where these carts never go. Then it will be observed that where this dirty work is done nearly all the wall space is perforated by windows or doors and the windows have louvre openings to direct the draught upwards. But not content with the ventilation and the through draughts thus provided and for fear that the windows might at any time be shut there is a large lantern ventilator on the roof which cannot be shut. Then the troughs themselves also act as ventilators, for they have openings about a foot square, through which the refuse falls into the cart below, but air also passes through.

The tripery is next to this compartment and a small opening in the wall enables the men to throw the tripe through. As it falls in the tripery it is placed in deep troughs made of granite where it is left to soak. The floors throughout are of granite flagstones carefully cemented together and the walls, to a height of five feet, are of glazed bricks. Thus all dirt is readily washed away and none can be absorbed. But the elaborate methods of ventilation are still more remarkable. The accompanying illustration (Fig. 6) shows two buildings side by side. In the larger structure the tripe is dressed; in the smaller the heads and feet are boiled. It will be noticed that throughout louvre windows abound on all the external walls. But there are also two large glass-framed lantern ventilators on the apex of each roof and a considerable number of Dr. Platner's ventilating cowls. It might be thought that such abundant means of natural ventilation would suffice. All scientific authorities, however, know full well that natural ventilation is not to be relied upon. Consequently there are air shafts along the inner walls and near the ceiling. An electric motor causes a fan to revolve so as to propel through these shafts some very hot air. This is easily obtained as throughout the building there are pipes supplying hot and cold water for the preparing of the tripe and boiling of the feet, the calves' heads, &c. The air shafts have small openings every three feet to draw away the steam and vitiated air.

On the other side of the building, constructed especially for the emptying of the contents of the stomachs and large intestines, is a small but wonderfully airy building reserved exclusively for the making of sausage skins. In this work it is impossible to prevent a very unpleasant odour, therefore it should be carried out in a separate and specially well-ventilated building. Consequently this department is kept scrupulously clean. The walls and the floor are of water-tight non-absorbent material. Thus they can be, and are, constantly washed with a deluge of water and therefore the odour does not adhere to them, particularly as the abundance of light and air further helps to dispel the sickly smell of the dried gut.

Such are some of the most striking features of this recently built and model abattoir. But it will be said that though all this is admirable the cost is likely to prove prohibitive. Such, fortunately, is not the case. The butchers have to pay to the municipality 7 francs (5*s.* 7*d.*) to kill a bull or bullock, 4*s.* for a cow or heifer, 1*s.* 3*d.* for a calf, 8*d.* for a sheep, and 2*s.* for a pig. The last charge includes the cooking of the head and feet. Then there is another source of revenue—namely, £10 a year for a large cage and £6 a year for a cellar to keep sausage meat and other meat. Then, again, when there is a case of taeniasis and cysticercus, a larval form of tapeworm, the carcass need not be destroyed. It must be placed in the cold storage under lock and key and the key is kept by the director of the abattoir for three weeks. This procedure kills the larvæ and the meat can then be safely consumed. But for the cold storage it would have to be destroyed, so that the butcher is pleased to pay the necessary rent and thus to escape a considerable loss. Nevertheless the cold-storage department does not pay and for the simple reason that it is just double the size that is at present required. If all the space available was utilised it would pay. It was, however, thought best to make provision for the probable increase of the population. Actually the receipts cover the working expenses but there is nothing remaining over to create a sinking fund. With regard to the slaughter-house the financial position is satisfactory, for the receipts suffice to pay 4½ per cent. interest on the loan capital and 2 per cent. to the sinking or amortisation fund.

Therefore it will be seen that it is possible to build perfectly satisfactory public slaughter-houses without involving the taxpayer in unremunerative enterprises. On the contrary a valuable public property is created; at the same time a great guarantee is provided in regard to the wholesomeness of the food-supply and thus the outlay is rendered doubly remunerative.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Ingleby Lectures.

IN his second lecture Dr. Thomas Wilson proceeded to consider the diagnosis and treatment of inflammatory conditions of the uterine appendages, basing his remarks, as in the previous lecture, on a series of 260 cases which had been under his direct supervision. The origin of the inflammatory condition in this series of cases was directly connected with the puerperal state in considerably more than half the patients (160), and in a general manner as regards the period of infection the cases were divisible into an early and a late group, the infection occurring in the latter group after the lapse of two or three weeks. Dr. Wilson emphasised the necessity for diagnostic purposes not only of a thorough local examination but also of a careful consideration of all the bodily functions, and he mentioned the main symptoms and physical signs on which reliance could be placed. In association with the cases of serous inflammation he noted a distinct tendency to localisation of the effused fluid, and in this condition he thought that the patient's aspect was devoid of the anxious, drawn, and toxic look so frequently seen in septic cases, whilst the swelling itself was, as a rule, elastic. He deprecated too great reliance upon leucocytosis as being diagnostic of pus formation, well-marked leucocytosis occurring in purely serous cases. With regard to the treatment of serous collections he advocated incision and drainage, rapid improvement being thereby attained, and he recommended the opening and draining of all collections of pus but emphatically deprecated more radical treatment. Dr. Wilson discussed gonorrhœal inflammations at some length and advocated in chronic and subacute cases the use of hot douches, glycerine tampons, and electric heat baths. In the concluding part of his lecture he expressed the hope that newer methods of treatment would be initiated with the object of stopping disease at the outset and that then, as a consequence, the more or less barbarous methods now adopted would become matters of history.

The Birmingham Medical Benevolent Society.

The object of this society is to aid medical men and their families who have fallen into necessitous circumstances. It is at present providing 23 annuities and it has invested funds to the amount of £15,940. The area of its operations extends for 100 miles round Birmingham and, as Sir James Sawyer points out, there are in the area about 4000 medical men, of whom less than 400 are members of the society. This is much to be regretted, for the design of the society, mutual help, should appeal strongly to a class of men many of whom are liable to be cast out of active work at any moment by many causes. At the recent annual meeting Dr. E. Rickards resigned his position as president at the end of his term of office and Dr. E. B. Whitcombe was appointed in his place. Mr. W. F. Haslam and Mr. F. Marsh were appointed treasurers in the place of Sir Thomas F. Chavasse, Mr. Haslam having first resigned the secretaryship which he had held for a period of 16 years. Dr. J. E. H. Sawyer was appointed secretary, and Sir Thomas Chavasse, Dr. E. Malins, and Mr. A. C. Underwood were elected to three vacant positions on the court of directors.

The Birmingham Lying-in Charity.

The governors of the charity are establishing a new maternity and training hospital with the object of meeting a long-felt want in this city in which, as the chairman and treasurer state in their appeal, there has hitherto been "no institution for the reception of serious maternity cases except in connexion with the Poor-law." The total sum needed for land and buildings is £15,500 and for additional income £800 a year. Towards the former £13,400 have already been

collected and the chairman and treasurer now appeal for more, especially to the women of Birmingham, to provide the £2100 for buildings and the necessary annual income. It is to be hoped that the appeal will receive the answer which it deserves and in that case more than the necessary sum will be forthcoming, for the suffering which it is sought to alleviate has the sympathy of all peoples and all classes.

The Employment of Specialists in Workhouse Infirmaries.

It is quite obvious that the medical officer of a workhouse cannot be expected to be capable of dealing in the most satisfactory manner with all cases which require operative interference, yet until quite recently it has apparently been the custom at Aston, as at many other places, that the medical officer should do all that has to be done or himself pay a specialist to do any operations which he does not feel himself competent to undertake. It seems, however, that at Aston this custom has gone on rather from want of knowledge than from design and when the matter was brought to the notice of the guardians at a recent meeting they took the proper step and authorised the employment of a specialist in all cases in which the medical officer desired help. Their action can be cordially recommended to all boards of guardians who have not yet taken proper action in this matter.

Suggested Compulsory Notification of Consumption.

At a recent meeting of the Yardley district council it was proposed that the council should express its conviction that pulmonary tuberculosis should be included amongst the compulsorily notifiable diseases. The medical officer of health was not prepared to support the motion; nevertheless it was carried by a vote of 16 to 1, and it was decided that a copy of the resolution should be sent to the Local Government Board. There is but little probability that the wish of the Yardley council will be gratified for some time to come but the action which it has taken may be welcomed as a sign that the infective character of the disease is becoming better understood, for as the knowledge of the danger spreads the task of medical men who have to deal with the sufferers and their friends will be considerably lightened, whilst more care will be taken to deal effectively with the sputum, with the result that much trouble and many lives will be saved.

Food for School Children.

The education committee has had the matter of providing meals for children under its consideration for some time and it appears from the evidence which it has gathered that something must be done. The voluntary agencies have ceased work and the number of meals provided by the guardians has fallen considerably below that which is well known to be necessary. There are 98,000 children on the registers of the public elementary schools and it is estimated that at least 4500 of them need food before the opening of the schools each morning. It is proposed to spend £2000 per year out of the rates for the purpose of providing breakfasts for these children and to this there can be no objection, for the children must not be allowed to suffer; but it is to be hoped that the authorities will not permit parents who have the necessary means to shirk their personal obligations.

Bequests to Wolverhampton Hospitals.

By the will of the late Miss Perry of Wergs Hall, near Wolverhampton, a large sum of money is bequeathed to the hospitals of Wolverhampton. The Wolverhampton General Hospital, the Women's Hospital, and the Queen Victoria Nursing Institution will each receive £5000, the Eye Infirmary £3000, and the Blind Institute £2000.

May 28th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Port Sanitary Authority and the Dangers of Anthrax; Medical Inspection of Emigrants.

IN the annual report of the medical officer of health to the port sanitary authority the statement appears that the constant recurrence of cases of anthrax amongst labourers and others working cargoes on ships or carting material into the city gave rise to some anxiety, and the matter was investigated by the assistant port medical officer. It was ascertained that during the three years ending December, 1906, no less than 21 cases, mostly of dock labourers, had come to the knowledge of the department; all of them, with one exception, were cases of the external form of anthrax—namely, malignant pustule. 14 of the cases ended fatally. Much has been done by the officials of the Home Office and the Liverpool port sanitary authority to spread a rudimentary knowledge of the first symptoms of the disease among dock labourers and others; they also recommend the wearing of gloves, persal cleanliness, and early attention to treatment, and advise labourers with cuts or scratches on the hands, face, or neck to avoid handling those products which cannot be disinfected without serious danger to the material. Dr. E. W. Hope states that anthrax ought to be placed in Liverpool amongst the compulsorily notifiable diseases under the Infectious Disease (Notification) Act, 1889. During the year 1906 there were seven cases reported amongst dock labourers handling dry hides and skins from various parts of the world. The medical inspection of emigrants on board the outward-bound steamers is carried on by Mr. J. de Vere Hill and Dr. J. R. Stocker, the medical officers appointed by the Board of Trade. Emigrants showing symptoms of illness, or coming from localities where infection is rife, are liable to be rejected. One of the port sanitary inspectors is present at these Board of Trade clearances. There were 407 inspections during the year 1906 and 111 persons (mostly children) were rejected on account of disease of an infectious nature, or because of being under suspicion of developing such. These persons were taken charge of by the inspector who made arrangements for their removal, if necessary, to hospital. The constant stream of emigration westward to Canada and the United States of America from all parts of the continent of Europe and the British Isles finds in the port of Liverpool its main and natural outlet. This increased passenger traffic brings with it increased risks of imported disease.

Home for Epileptic Children at Maghull.

In view of the great need for further provision for the care and treatment of epileptic children the committee of the Home for Epileptics at Maghull has decided to erect a special building for boys and girls, the estimated cost of which, with furniture, will be £8000. So far £3255 have been promised, Miss Chilton (lady superintendent of the home), heading the list with a contribution of £800.

Hospital Saturday Collection.

The thirty-seventh annual collection on behalf of the medical charities of Liverpool was made in the workshops, offices, and warehouses of the city on Saturday, May 18th. Last year's total was £9142 and special efforts were made on this occasion to raise £10,000. The movement initiated last year by Mr. W. P. Hartley and Alderman L. S. Cohen whereby ten ladies and gentlemen each promised to add 10 per cent. to any increase which might take place in the Saturday and Sunday funds will continue to apply to this year's receipts, and inasmuch as the Hospital Sunday collection shows a substantial increase over that of 1906 it is hoped that the medical charities will be materially benefited as a result of the generous offer. The ladies' street collection will take place on Saturday, June 8th.

May 28th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Institution of Founders' Day at Queen Margaret College, Glasgow.

AT the institution of Founders' Day, which was held on May 23rd, a large number of students, past and present, assembled at Queen Margaret College, which is the section of the University of Glasgow devoted to the education of women. Miss Galloway, LL.D., gave an interesting account of the rise and progress of the higher education of women movement in Glasgow. In the course of her remarks she spoke of the splendid work done by the late Mrs. Campbell, LL.D., of Tullichewan. Mrs. Campbell was the last of the founders and it was felt that something should be done to perpetuate the memory of the great services rendered to Queen Margaret College by Mrs. Campbell, Mrs. Elder, the donor of the College buildings, and Professor John Young, the founder of the medical school. Miss Galloway accordingly proposed a motion to the effect that an annual meeting of present and past students of Queen Margaret

College and Gilmorehill should be held in May. She further proposed that this meeting should be called Founders' Day. Besides commemorating those who had gone before Founders' Day would do much to keep together past students and to unite all more closely together. Miss Galloway stated that so long as she remained at Queen Margaret's she would give the annual "At Home" and she expressed the hope that Founders' Day would thereafter be kept up by the Students' Union and Graduates' Association. The motion was adopted and it was resolved to make Founders' Day an annual event.

"Fresh Air Fortnight" Scheme in Scotland.

To those interested in the physical well-being of the young children in our large cities the report recently published by the Fresh Air Fund Committee should cause considerable gratification. In a list published of the towns now covered by the Fresh Air Fund Aberdeen is represented by 3000 children, Dundee by 3000 children, Edinburgh by 4000 children, and Glasgow by 6000 children. A noteworthy feature of the report is that there are no expenses of management in connexion with the fund. Every penny subscribed goes to the children in food or fares.

Sewage Purification Works in Scotland.

It is interesting to note in connexion with the sewage purification scheme for Dumbarton that 18 Scotch burghs have bacteriological systems of sewage purification already in operation. In seven cases systems are being laid down and in the case of 14 burghs schemes are under consideration.

Cerebro-spinal Meningitis.

Another death from this disease took place in Dundee during the past week. The victim was a young man aged 25 years. This is the first adult who has succumbed from the disease in Dundee. Two suspected cases of cerebro-spinal fever have been removed to the Forfar county isolation hospital.

Aberdeen University Anatomical and Anthropological Society.

At a meeting of this society held at Marischal College last week Professor R. W. Reid conducted the members round the new anthropometrical museum and gave an excellent description of the various sections, describing more minutely certain articles which were especially interesting for their local associations or extreme rarity. Afterwards Dr. Moir demonstrated a number of specimens from West Africa.

Aberdeen and Small-pox.

Since March, 1904, no cases of small-pox have occurred in Aberdeen till the past month, when the steam trawler *Macleods* arrived from Lisbon with a crew, mainly Portuguese, one of whom was suffering from the disease. The patient, who was removed to the city hospital, suffered from a comparatively mild attack of small-pox and has made an excellent recovery. No further cases have arisen among the crew or among persons in contact with them.

May 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Post-graduate Classes in Dublin.

THE syllabus of lectures and demonstrations in connexion with the School of Physic of Trinity College has appeared and differs little from former editions. This course has during the last three years proved very comprehensive, effective, and popular. It has been largely attended by medical men from the country. It will begin on June 17th and will terminate in three weeks—an arrangement which suits the practitioner from the country who cannot leave his duties for any long period. The medical school of the Catholic University in connexion with the Mater Misericordiæ Hospital, which is the largest hospital in Ireland giving clinical teaching, advertises a post-graduate course to commence on June 10th and another—an autumn course—on Sept. 16th. Each course will extend over a period of three weeks. The registrar of the medical school, Cecilia-street, Dublin, will furnish any particulars of these courses. The Royal College of Surgeons in Ireland will arrange also for two courses of lectures and demonstrations, the first to begin on June 10th and the second on Sept. 23rd. In addition to the usual subjects of instruction practical demonstration of operations on the cadaver will be included. Each course will occupy three weeks. The inclusive fee for each of the above-mentioned courses is 5 guineas.

Royal Medical Benevolent Fund Society of Ireland.

The central committee of this society passed the following resolution at their last meeting:—

The central committee of the Royal Medical Benevolent Fund Society of Ireland desire to express to Dr. Richard Purdon of Belfast their high appreciation of the valuable services he has rendered to the society in the capacity of honorary secretary of the Belfast branch for ten years, and have learned with regret of his resignation of this position.

Health of Belfast.

At a meeting of the public health committee held on May 23rd it was reported that 24 cases of cerebro-spinal fever had been notified during the week as compared with 29 in the previous week. It is said that the type of the disease is not so severe now as in the early cases. The total number of cases notified in Belfast up to May 23rd is 445, with 316 deaths. Three deaths have occurred in Lurgan workhouse from the disease, the last being on May 23rd. There is at present an epidemic of measles in the north portion of the city and it has been found necessary to close one of the schools. It was also reported that proposals would be submitted next week by which the Forster Green Hospital would supply 25 beds for consumptives. The sub-committee appointed for the purpose recommends fortnightly cleansing of ashpits but has not yet decided on the adoption of ashbins, and all the rent agents in the city have been summoned to meet the committee to discuss the question.

Health Prosecutions in Belfast.

The Belfast city corporation has been showing considerable activity in prosecuting offenders for violation of the Public Health Acts in connexion with milk (exposing it for sale in unwashed vessels and allowing rubbish to be conveyed in milk-carts), for keeping pigs within 15 feet of a dwelling-house, and for not taking down houses in a dangerous condition. This action of the city council, though belated, is to be commended; it is entirely due to the revelations brought out at the Health Commission, which have compelled, through the force of public opinion, the city council to put in force its Acts. In the past the excuse was too often put forward that it had not power. Its action now supports the view of the Local Government Board that it had ample power under its sanitary Acts if it would only put them in force.

Asylum Accommodation in Belfast.

It is clear from a report presented to the finance committee of the Belfast city council on May 27th that the time has arrived when it will be necessary to erect further villas and administrative buildings at Purdysburn city asylum where at present there is accommodation for 400 patients. At the Grosvenor-road institution (the original asylum) there are still 680 inmates and at the Ballymena annexe 62, and to provide room for these additional 750 patients would cost about £75,000, and to build administrative buildings (hospital, churches, recreation hall, workshops, farm buildings, &c.) a sum of £35,000 would be required—that is, £110,000 in all. This most important question was postponed for further discussion.

May 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Syphilitic Nephritis.

AT a meeting of the Hospital Medical Society held on May 18th M. Dufour and M. André Martin communicated the case of a patient suffering from syphilitic nephritis with copious albuminuria. This condition lasted for two and a half years, after which the patient recovered. The two observers stated that they had noticed that a salt-free diet exercised a most favourable influence upon the patient who rapidly relapsed whenever a little salt was added to his diet on some four or five occasions. The effects of mercury in syphilitic nephritis are very variable. Sometimes the œdema disappears and the quantity of urine lessens under its use, while at other times the drug has apparently no effect.

The Action of the Thyroid Gland upon the Hairy System.

At a recent meeting of the Society of Biology M. Levi spoke of the action of the thyroid gland upon the hairy

system. Pathology affords numerous examples of this as in myxœdema, whether spontaneous or acquired by operation, in both of which conditions the hair falls out, or in cases of hypothyroidia when premature greyness occurs. He mentioned the case of a stunted (*arriéré*) child suffering from hypothyroidia whose hair was quite white. Thyroid insufficiency again shows itself in the falling of hair during pregnancy, during general infections, and during the second period of syphilis. In this last condition falling of the hairs at the extremities of the eyebrows is a common symptom.

The Provision of Employment for Widows and Orphans of Medical Men.

The General Association of French Medical Men recognises that any effective scheme of helping medical men's widows and orphans who, though capable of work, have been left destitute must include the provision of employment and situations of which they are capable rather than the giving to them continual monetary aid which is too often insufficient and ineffective. At the general meeting on April 14th it was decided to organise an agency for providing both work and situations in accordance with the recommendations contained in a report presented by Dr. Bouloumié. The wish has further been expressed that the scope of this organisation, with the same provisions as have been made for the central society, may be extended to the whole of France with the consent of the united societies so that the association's beneficiaries may everywhere profit by it. The end particularly aimed at is the provision of permanent situations, but the search for employment suitable to each individual case is often a lengthy proceeding, and the association, by offering immediate work, will provide means for waiting and will help in the search. To carry out these plans the central society has appointed a special relief committee which is to delegate to a ladies' committee those parts of its duties which personally concern its clients. It has opened in its secretarial offices a register of "situations vacant and wanted," reserved for cases of distress amongst families of medical men and it has obtained the support, on the one hand, of the medical press syndicate to give these lists all necessary publicity, and, on the other hand, of various charitable employment organisations, so that work in accordance with the requirements of each individual case may be obtained at once. The institution of this new scheme of relief cannot fail to command the sympathies of the entire medical profession who know well with what difficulties the task of efficiently relieving the wants of a destitute person for life is beset, and what a large number of families of medical men live after the breadwinner's death in need and in daily dread of destitution.

Obituary.

Death continues to be busy among the members of the medical profession in France. The latest to pass away is Dr. Charrin. He recently died at the age of 52 years. He was professor at the College de France, an *agrégé* of the Paris Faculty of Medicine, and physician to the hospitals. A pupil of Pasteur and of Professor Bouchard, he has left numerous works dealing with embryogeny and bacteriology which have gained him great reputation throughout the scientific world. He had been for many years physician to M. Loubet, late President of the Republic.

The Thyroid Treatment of Infantilism.

At a meeting of the Hospitals Medical Society held on May 24th M. Apert mentioned the case of a patient the subject of hereditary syphilis. He had always been a sickly child and at the age of 12 years his growth stopped completely. Moreover, his weight began to decline. When he was 14 years of age thyroid treatment was begun, with the result that the child, who for two years had remained absolutely stationary, rapidly made up for lost time. He is now 18 years of age, appears quite normal, and was recently accepted for military service.

May 27th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Forty Families Poisoned by "Preserved" Tunny.

THE Tuscan press, professional and lay, has been much exercised by the wholesale poisoning (fortunately without fatal consequences) of some 40 families at Figline Valdarno after the consumption of "preserved" tunny. Grave gastric and intestinal trouble was the symptom in each case and the local sanitary authority had no difficulty in tracing it to the ingestion of that favourite edible among the Italian *bourgeoisie*—tunny fish reduced to paste and preserved in tins. The examination by the said authority was confirmed by three experts commissioned from headquarters, who found that the fish had been "badly prepared," and that the consignment consumed at Figline Valdarno especially was charged with microbes other than "benevolent." Every shop where the article was on sale had forthwith to give it up to the authorities, while the Spanish firm from which it had been imported was promptly advised of the quality of its wares. As I have said, "preserved" tunny is in much favour as food with the Italian lower middle class and is often to be had at pretentious restaurants, where, eaten in conjunction with "fagiolini" (*haricots verts*), it forms a piquant, even pleasant addition to the *menu*. Indeed, the English-speaking visitor is often tempted by the attractive look of the dish to make a trial of it and, finding it in Italian phrase "molto saporito," to make it the chief part of a noonday or evening repast. The "fagiolini" accompanying it, moreover, are oftener than not "preserved" in tins and deleterious in consequence, so that if eaten with bread which owes its seductive whiteness to alum, and washed down with "Chianti," the "prickly after-taste" of which, so pleasant at the time, is due to the same astringent, the adventurous and unsuspecting consumer is likely to find by subsequent experience that his meal has been somewhat of a chastened joy. However, forewarned, forearmed; and the systematic "boicottaggio" (boycotting) of tinned foods on the part of the travelling public is beginning to reduce the consumption and the sale of such edibles (especially when the date of the tinning process is withheld) and to minimise the occurrence of such "avvelenamenti" (poisonings) as that reported officially from Figline Valdarno.

A "Civic Hospital" at Caprera.

The first centenary of the birth of Giuseppe Garibaldi will, on July 7th next, be celebrated all the world over wherever two or three Italians can meet in the name of "Italia Unita ed Indipendente." A special feature of the programme, now in course of completion for Italy, will be a pilgrimage to the island of Caprera, the sea-girt rock in the Straits of Bonifacio which the hero purchased out of his South American savings, to which he retired when "at bay," after the failure of this or that raid upon the temporal power and on which he died just a quarter of a century ago. That pilgrimage will consist of many thousands of visitors to his tomb, mainly of Italian, but also, to some extent, of English-speaking nationality. To commemorate this tribute to the "Manes" of the most unselfish of "liberators," his son and daughter-in-law (General Ricciotti and Madame Garibaldi) propose the dedication of a column suitably inscribed, and, more significant still, the erection of a "Spedale Civico" for the rehabilitation (presumably) of the convalescent among the "*classi meno agiate*" (less favoured classes). Nothing would have gratified the humane and tender-hearted hero more than such a hospital, devoted as he was in his declining period to public sanitation in its widest sense and to the physical well-being of the compatriots whom he had helped to disenthrall. His scheme for the reclamation of the Campagna and its restoration to the salubrity which it enjoyed under the Antonines was but one of the many proofs which he gave of this humanitarian spirit—a spirit which went out lovingly even to the lower animals, notably to the birds that are so ruthlessly shot down all over Italy. In his dying hours he found it (according to Madame Garibaldi) a pleasing distraction to watch from his pillow his little feathered favourites as they fluttered down on his window-sill, as if prescient of the departure of their protector. Henceforth, it seems, no wild birds will be killed in Caprera—a law in keeping with the all too tardy legislation by which the wholesale destruction of the feathered tribe is being arrested throughout Italy—not only to the restored amenity of the woodland but to the safeguarding of the root-crops so disastrously affected by the worm.

"Propaganda Sanitaria."

Such is the title of a new periodical to be published at Florence under the eminently capable direction of Professor Di Vestea, Professor Lustig, and Professor Sclavo, its *rédacteur-en-chef* being Professor Mercanti. Its object is to popularise the laws of health and to bring the "norme

d'igiene" within the purview of all Italians, high and low, so as to make the inhabitants of every town and the inmates of every dwelling intelligent coöperators in the carrying out of the great "Codice Sanitario" devised and reduced to practical working by the Garibaldian Surgeon-General Agostino Bertani of Genoa. The new venture "deserves," and I hope, will "command" success.

May 25th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Cerebro-spinal Meningitis.

THE local newspapers announce that the Chief Sanitary Municipal Council of Constantinople has found that several isolated cases of cerebro-spinal meningitis have occurred in different districts of the metropolis. Thus from the mortality returns for last week it is seen that out of the total of 288 deaths one died from scarlet fever, three from small-pox, three from enteric fever, 45 from tuberculous diseases, and four from cerebro-spinal meningitis. Precautions have been taken to prevent the spread of the disease.

Enteric Fever at Philippopolis.

From Philippopolis comes the news that an epidemic of enteric fever has broken out in that city. The epidemic seems to be of an alarming character, as it is reported that over 1000 people have been attacked in the course of a few days.

Pilgrimage Statistics.

The total of this year's pilgrims to Mecca and Medina was 281,100. Of this number 113,000 were Ottoman subjects, 12,000 were Bokhariotes, 4500 were Malays, 40,000 were Indians, 10,000 were Afghans, 16,000 were Russians, 15,000 were Persians, 13,000 were Soudanese, and 17,000 were Moroccans. The state of health of the pilgrims on the way to and from the holy cities of Islam has been very satisfactory, which is partly due to the more speedy transport and communications by means of the new Hedjaz railway.

Two Cases of Remarkable Longevity.

In the village of Birél, near Anamore (vilayet Adana), there died last week a Mussulman, Khalil Codjaoglou by name, at the age of 115 years, the cause of death being a mere accident. He enjoyed good health to the very last. His youngest son was only 20 years old. Another case of longevity has occurred at Smyrna. This time it was a Greek named Frankaki who died when he was 106 years old. He is said to have had all his teeth, was never ill, and was to the last moment in full possession of his mental and physical faculties.

May 24th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Legal Position of Unqualified Medical Practitioners and Quack Medicines.

SOME of the abuses which are connected with quackery have been recently engaging the attention of the higher courts of justice, and in a judgment delivered not long ago the Supreme Court decided that for the conviction of a person charged with an offence of this description it was not necessary to prove that the treatment employed by him was detrimental to the patient; the mere fact that a person offered medical advice or undertook the medical treatment of a patient without being in possession of proper qualifications was sufficient to bring him under the power of the law. If he be convicted as a quack it must be proved that he received payment on more than one occasion for his medical work. The punishment was then much more severe. Several ordinances of the Ministry of the Interior have quite recently been published dealing with the sale of proprietary and other medicines of secret composition and announcing that the advertisement of remedies which are sold by pharmaceutical chemists and in the so-called Apotheke is allowed only under the restriction that such advertisements do not contain medical advice and recommendations from other than medical men, and that the statements made are not preposterous or misleading. Medicines, the composition of which has either not been disclosed to the Board of Health or has been intentionally misdescribed, must not be sold in these shops, even on the request of a qualified medical man. Another ordinance deals specially with electrical apparatus and so-called "cures." Quite a number of appliances are advertised in the Austrian newspapers under various high-sounding names, such as the "electro-vitalizer" and others of a like kind. The majority come from America but some come from England and some come from Germany. Nervous disorders and diseases of the ear are the class of cases mainly appealed to in the advertisements of the "cures." Acting on a suggestion made by the Austrian Antiquackery Society, the Minister of the Interior has forbidden the newspapers to accept these advertisements and has issued a warning to the public informing them of the fraudulent nature of such statements.

Puerperal Fever and its Treatment.

Dr. Latzko read recently before the Gesellschaft der Aerste a paper on the Treatment of Puerperal Fever and put forward some new views relative to surgical operations on the abdomen and genital organs. He recommended active measures in regard to the peritonitis so often seen post partum and in regard to the parametritic process which he believed to be of the same nature as the periphlebitis of the uterine veins. The parametritis was therefore aptly called by him "phlegmasia alba dolens ligamenti lati." For this condition he operated by the vaginal route and if possible he extirpated the uterus, thus removing the cause of septic infection of the organism. He preferred supravaginal amputation to any other procedure in such cases. If diffuse peritonitis was present he opened the abdomen by means of a large incision and drained it, leaving it open for a few days until the condition of the secretion improved. In serious pyæmic affections of the pelvis, such as metrophlebitis, he opened the veins after double ligature and drained the vessel after removing the thrombosed masses in a way similar to that employed by otologists when dealing with thrombosis of the sinus of the internal jugular vein. In less urgent cases a trial of collargol inunctions and anti-streptococcic serum might be made. The results obtained with the latter in Dr. Chrobak's clinic were very favourable—even better than those of the operations performed by Dr. Latzko. In the clinic amongst 225 cases not treated with serum there were 27 deaths, whilst amongst 246 cases where the serum was used only 13 deaths occurred—i.e., a mortality of 5·28 per cent. During the last two years 55 patients suffering from peritonitis have been operated upon by Dr. Latzko. Of these 28 were cases of free diffuse inflammation and 27 were cases of circumscribed inflammation; of the former 28 patients 9 recovered and 19 died, while of the latter 27 patients 23 recovered and only 4 died. His results were therefore fairly favourable.

Removal of a Tumour of the Hypophysis Cerebri through the Nose.

An interesting account of one of the rarest operations was given by Professor Schloffer of Innsbruck at a recent meeting of the Medical Society. The patient was a man, aged 30 years, who was so weak that only a quick and not extensive operation could be attempted. The symptoms were constant headache, anæmia, bitemporal hemianopsia, and lately a very unusual symptom presented itself—namely, the rapid disappearance of all the hair on the body except a few hairs on the pubes and on the chin. Examination by x rays revealed the presence of a tumour of the hypophysis; the sella turcica was manifestly enlarged, being of about the size of a walnut, and its contents cast a shadow similar to that of the neighbouring brain tissue. The patient complained of unbearable pains in the head and neck, his sexual power was almost entirely lost, and he was prepared to undergo any operation which gave a prospect of relief. The first stage of the operation consisted in freeing the whole nose by the method of Bruns and turning it to the right side. All the turbinated bones were removed and the septum was excised, the resulting profuse hæmorrhage being checked by plugging. The inner wall of the left orbit was removed until the optic foramen was reached; the inner walls of the antrum of Highmore and the nasal process of the upper jaw were broken away without loss of blood. The ethmoidal sinus was then cleared out and the sphenoidal cavity was opened. By careful measurement it was ascertained that the operator had actually reached the sella turcica, for the difficulty lay in

this, that it was essential for a good result to know whether the cavity exposed was really the sphenoidal cavity, diminished by the enlarged sella turcica, or whether the ethmoidal labyrinth was still present. An x-ray photograph showed the distance between the root of the nose and the sella turcica to be six centimetres but as x-ray photographs are usually enlarged copies of the original the actual distance was computed to be 5·3 centimetres, and at this depth, after perforating another lamina of bone, a bluish tumour was visible; it was very soft and friable, and although carefully removed parts of it were lost in the blood. The greatest part of the tumour (about four-fifths) was extirpated in this way, but the remainder could not be got at without damaging the dura mater, so it was left behind. A large quantity of cerebro-spinal fluid escaped at the end of the operation. The cavity in the sella turcica was plugged with gauze dipped in balsam of Peru, a similar gauze drain was packed on the base of the skull, and both drains were led out towards the nose, which was replaced and carefully fixed in position with sutures. The after-history was uneventful. For the first few days cerebro-spinal fluid came out at the tip of the nose every few minutes. The headache completely vanished. The drains remained *in situ* for nine days and were not renewed. Except for an attack of erysipelas no trouble intervened and recovery was complete by the fifth week after the operation. The hemianopsia was the same as before, but the patient could enjoy life again. A curious fact was that his hair began to grow again everywhere; the explanation was not easy, perhaps the hypertrophy of the hypophysis produced an over-action of the organ, which was probably detrimental to the growth of hair. The examination of the removed parts proved them to be simply an enlarged hypophysis. Notable features of the operation were the unexpected ease with which the gland was reached, the small amount of hæmorrhage in the latter stages, and the absence of post-operative meningitis. No more than 20 cases of operation for such conditions are at present known and this is supposed to be the only successful one.

May 27th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Epileptic Colony.

THE first epileptic colony in Australia was opened by Lady Talbot just before she left Victoria. It is situated at Clayton on a block of 165 acres of fertile land presented by Mr. Mason. Accommodation will be afforded for 70 patients, at a cost of about £7000. It is intended to make the institution so far as possible self-supporting from the start, using the land for farming and raising bees, silk, and flowers.

Hospital Matters.

During a recent inquest on the body of a child who had previously attended at the Melbourne Children's Hospital it was disclosed that it was the custom of the resident medical staff to give death certificates on information obtained from the hospital records. The coroner said it was a practice that should be stopped.—At a recent meeting of the committee of the Western Suburbs Cottage Hospital (Sydney) attention was drawn to several cases which were admitted to the hospital on the recommendation of outside medical practitioners, though the patients were well able to afford private treatment. A resolution was passed asking the coöperation of residents in seeing that only deserving cases among the poor of the district are sent in for treatment.—Tenders have been accepted for the erection of a consumption block at the Hospital for Incurables, Waterfall, New South Wales.

Pollution of Sydney Water-supply.

The Sydney Water and Sewage Board has endeavoured to get the public works department to take measures to prevent pollution of the Sydney water-supply from the Cataract River, but the department is not inclined to do anything as the Government analyst was of opinion that the water was not so bad as Dr. E. S. Stokes, the board's medical officer, stated. Dr. Stokes never said that it was injurious to health but that it contained a large amount of organic matter. The board passed a resolution at its last meeting earnestly requesting the Minister of Public Works to allow the board to clear away as much as possible of the vegetable matter in the catchment area.

Nuisance from George's River, Liverpool.

Dr. W. G. Armstrong, medical officer of health of the metropolitan district, New South Wales, has furnished a report on the alleged nuisance at Liverpool caused by pollution of the George's River. He finds that the river is grossly polluted, mainly from wool-washing, and that wastes therefrom should be satisfactorily purified before they are admitted to the river and that wool-washing and fell-mongering should be proclaimed as noxious trades.

Aid to Friendly Societies.

The Premier of New South Wales announced at a demonstration given by the Grand Lodge of the Independent Order of Oddfellows on April 9th that the Government proposed to aid the friendly societies by giving—

1. One-third of the cost after 12 months' sickness of all members under the age of 65 years, or being women, under the age of 60.
2. To pay the whole cost of sick pay for all members over the age of 65 in the case of men, and over the age of 60 in the case of women. The cost to the State not to exceed 3*s.* 4*d.* per week under 65, nor 5*s.* per week over 65—

subject to the following conditions:—

(*a*) That sickness fund is proved solvent by valuation and that a pro-rata reduction be made on certificate of registrar of friendly societies, according to degree of insolvency; (*b*) where no previous valuation and degree of insolvency unascertained, half rates payable until first valuation.

Medical attendance cost to be paid for all members above 65 (females 60). Trustees of society to pay subvention into proper funds and to render adjustment vouchers to Government. Registrar of friendly societies to tabulate and certify as to sickness. Payment conditioned on due observance of requirements under Friendly Societies Acts. Friendly societies may provide in their rules for raising moneys for purchase of annuity grants for their members. Any surplus appearing on valuation of friendly society may be devoted to the purchase of Government annuity for its members.

Action against a Dentist.

A dentist was the defendant in a recent action in Sydney to recover £100 compensation for injuries alleged to have been received by the plaintiff through negligence of the defendant in extracting her teeth. The plaintiff had a number of teeth extracted under an anæsthetic. She subsequently became very ill with lung trouble and finally coughed up a tooth four months afterwards. The judge said the evidence clearly showed that the plaintiff's illness was due to the defendant's action and negligence and gave a verdict for £75.

April 23rd.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—A smoking concert in connexion with this association will be held at the Café Monico, Piccadilly Circus, W., on Thursday evening next, June 6th, at 9 P.M. Members can obtain tickets from Mr. E. Canny Ryall, 77, Harley-street, London, W.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held on May 17th at Caxton House, Westminster, Dr. F. H. Champneys being in the chair. The Board considered charges as stated after their names against the following midwives whose names were ordered to be erased. Sarah Scott, that at a confinement she did not send for a medical man, the patient being ill with a high temperature. Mary Broxson, that at a confinement she did not send for a medical man on the occurrence of rigor. Ellen Lang, that at a confinement the perineum being ruptured she did not send for a medical man. Mary Lewin, that at a confinement she did not send for a medical man, the patient suffering from puerperal fever. Emma Applegate, that at a confinement the child when born being apparently in a dying condition she did not send for a medical man. Bridget Duffy, that at a confinement, the child being stillborn and no registered medical practitioner being in attendance, she failed to notify the occurrence to the local supervising authority. Mary Elliott, that at a confinement she was intoxicated. Mary Dunn, that she had been convicted of keeping a disorderly house. Martha Ann Laurance, that at a confinement she was guilty of negligence and misconduct. Elizabeth Jane Brennand, Charlotte Hales, and Emma Page, that they persistently refused to provide themselves with the appliances and antiseptics required by Rule E, 2. After charges had been considered against the following midwives they were censured by the Board: Ellen Pomfret, Catherine Johnson Waugh, and Louisa Wood. After charges against the following midwives had been considered they were cautioned by the Board: Hannah Rhodes, Mary Ann Smith, and Mary Upton.

Obituary.

SIR JOSEPH FAYRER, BART., K.C.S.I., M.D. EDIN., LL.D. EDIN. AND ST. ANDREWS, F.R.C.P. LOND., F.R.C.S. ENG. AND EDIN., F.R.S. LOND. AND EDIN., &C.,

PHYSICIAN-EXTRAORDINARY TO THE KING.

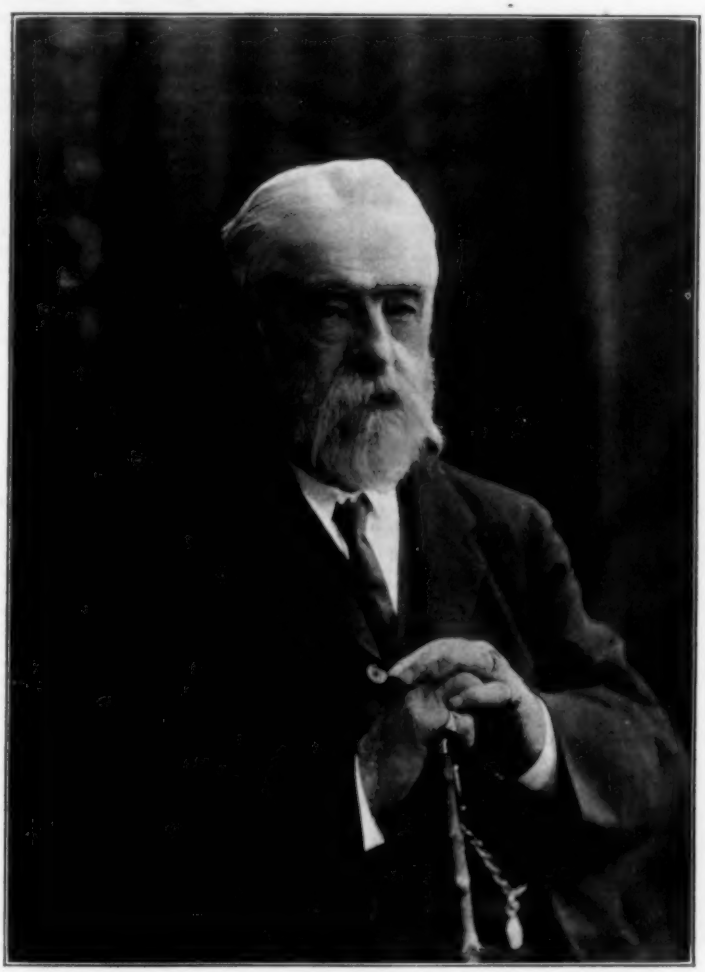
IT is with very great regret that the profession at large, the Indian Medical Service, and a very large circle of personal friends have heard of the passing away of Sir Joseph Fayrer. He died at his residence, Belfield, Falmouth, on Tuesday, May 21st, at the advanced age of 82 years.

Joseph Fayrer was the second son of Robert John Fayrer and Agnes, daughter of Richard Wilkinson, a Lancashire gentleman. His father, who attained to the rank of commander in the Royal Navy, subsequently commanded an Indiaman, for many years sailed in ships of that class, and was one of the pioneers of ocean steam navigation. The distinguished subject of our memoir was born on Dec. 6th, 1824, at Plymouth, where his father and mother were on a visit after one of the former's voyages back from India. He was educated under the Rev. R. Wallace at Dalrymple in Ayrshire, under private tutors, and at a private school at Liverpool. In 1840 he began the study of engineering, but, finding it too mechanical, at the age of 17 years was appointed a midshipman to the *Thames*, one of the fine fleet of steamers of the newly inaugurated West Indian Mail Steam-Packet Service, and in her he went to the West Indies, to Mexico, and to South America. He subsequently sailed with his father on H.M.S. *Tweedos* to Bermuda. On arrival the vessel was detained there as a receptacle for prisoners, as Bermuda was then a convict station. While at Bermuda his future career was determined during an outbreak of yellow fever. Becoming strongly impressed with the importance of the medical profession and seeing how highly it was valued and how great an influence its members exercised for good he determined to study to enter it. He first attended the practice of the naval hospital at Bermuda and in August, 1844, it was decided he should go to London to become a pupil at Charing Cross Hospital. He duly entered the school and registered as a student at the Royal College of Surgeons of England in the winter session of 1844, at the end of which he was awarded a scholarship at his school of £15 a year for two years. At Charing Cross his chief friends among the students were W. G. Hunter, subsequently, as Sir W. Guyon Hunter, surgeon-general of the Bombay army, and T. H. Huxley, the great Professor Huxley. His interest in his hospital never abated and 34 years later he was appointed consulting physician to the hospital and made a life governor. At the end of his second year as a student he was appointed house surgeon at the Westminster Ophthalmic Hospital under Guthrie and Hancock and in July, 1847, passed his examination at the Royal College of Surgeons and was duly enrolled. He became F.R.C.S. Edin. in 1858, M.D. Edin. in 1859, F.R.C.P. Lond. in 1872, and F.R.C.S. Eng. in 1878.

On August 4th, 1847, Sir William Burnett, the Naval Director-General, procured him a commission to H.M.S. *Victory* for service at Haslar Hospital, and accordingly he went to Portsmouth and was placed on the books of the *Victory*, where among his comrades was Dr. Andrew Clark, afterwards the President of the Royal College of Physicians of London. After a few weeks of ordinary duty, in October he was permitted to resign his commission temporarily in order that he might accompany Lord Mount-Edgcumbe on his travels. With Lord and Lady Mount-Edgcumbe he travelled through France, Germany, and Italy. While with them at Palermo political troubles commenced—the Sicilians were in opposition to the Neapolitan Government and before long broke out into open revolution. Together with his friend, Dr. Valentine Mott, he attended to, and did all he could for, the wounded, and obtained his first experience of gunshot wounds. While at Rome in January, 1849, he underwent the examination and received the degree of M.D. Returning to England he held for a few months an appointment in the Ordnance Medical Department, an appointment as assistant surgeon in Bengal, and on June 29th, 1850, he left Gravesend in the *Camperdown*, an East Indiaman, for Calcutta in medical charge of recruits for regiments in India. He arrived at Fort William on Oct. 9th and commenced his Indian service. His first appointment was to the civil station of Cherra Poonjee, whence he was soon ordered to Dacca, which at that time was extremely unhealthy, to take over medical charge of the 74th Bengal Native Infantry. He found on arrival that, with the exception of a few men for orderly work, all the sepoys at headquarters were in hospital; he gained at this time his first experience of cholera.

In 1852 he was selected as one of the field assistant surgeons to accompany the Bengal Division of the Burmah force. When it was decided to send a force up the river on the way to Rangoon to destroy the Thilawa stockade he asked permission to accompany the troops and was ordered to join the war steamer *Phlegethon;* he subsequently landed to escalade the stockade and was present at the spiking of the guns and destruction of the stockade by fire. At the taking of Rangoon, having obtained permission, he landed and formed a field hospital in a poongie-house, near to the White House picket, which was of the greatest service not only for the wounded but to the sufferers from sunstroke. After the city was in our possession, in addition to his other duties, he had those of civil surgeon of Rangoon assigned to him. For his services in Burmah he was transferred to serve under the Indian Foreign Office and was appointed residency surgeon at Lucknow. The offer of the appointment was made to him in an autograph letter signed "Dalhousie," in which the Governor-General explained that he had kept it vacant as the best medical appointment in his gift to bestow it upon the assistant surgeon who should be found to have rendered the most approved services during the war with Burmah. His designation was "Residency Surgeon, Superintendent of the King's Hospital, and Post-master." Colonel Sleeman was at the time the Resident but towards the end of 1854 he fell ill and Colonel Outram assumed the duties. Shortly before this change Fayrer was appointed an Honorary Assistant Resident and thus had political combined with his other duties. The time had come when effect was to be given to one of the articles of Lord Dalhousie's creed, "the extinction of independent provinces within our dominion." The Oudh Government had been so corrupt, despite all warnings, as to have forfeited all claim to further consideration, and Outram was sent to bring this state of things to a conclusion. Early in 1856 the annexation of Oudh, the last important act of Lord Dalhousie's administration, was carried out in detail by Lord Canning's orders, and Outram, anxious to provide for the old Residency officers, recommended that Dr. Fayrer should be made Deputy Commissioner of Lucknow, but the Governor-General wrote suggesting that as Dr. Fayrer had done well in his profession it was a pity to give it up, and that if he chose to continue in his present office he would guarantee his allowances and privileges. He accepted the suggestion and selected the designation of "Civil Surgeon of Lucknow and Superintendent of all charitable institutions." His new appointment dated from March 20th, 1856. During the succeeding months he reorganised the arrangements of the post-office which was then extended over the whole province.

Then came the Indian Mutiny and he was one of the principal actors during those dark days in the Lucknow Residency. He was one of the foremost men of action during the siege and defence from June 30th to the time of the first relief by Havelock and Outram on Sept. 25th, 1857, and during the continuation of the siege till the final relief by Sir Colin Campbell on Nov. 17th, 1857. After the evacuation of the Residency he with others made a forced march to Cawnpore to relieve Wyndham, who was engaged with the Gwalior rebels, and then proceeded to Allahabad where they sojourned in the fort. During the siege of Lucknow, when Sir Henry Lawrence proposed to remove the ladies and children to the Mutchi Bhowan, thinking they would be safer, Dr. Fayrer opposed the suggestion on hygienic grounds in the strongest terms and it soon became known that the last stand was to be made in the Residency. On the eventful day, July 2nd, when Sir Henry Lawrence was mortally wounded, Dr. Fayrer was one of those who tenderly carried his friend to the doctor's bungalow, where he was placed on a bed in the deep front verandah, from which he made an affecting leave-taking, adjuring his staff never to surrender or to treat with the enemy, and to do everything possible to protect the women and children, and, speaking most humbly of himself and all that he had done, he expressed a desire that the only epitaph on his tomb should be, "Here lies Henry Lawrence who tried to do his duty." The notes made by Dr. Fayrer during the siege are very circumstantial



SIR JOSEPH FAYRER, BART., K.C.S.I., M.D., LL.D. EDIN. AND ST. ANDREWS, F.R.C.P. LOND., F.R.C.S. ENG. AND EDIN., F.R.S. LOND. AND EDIN., &c.
PHYSICIAN EXTRAORDINARY TO THE KING.

and thrilling and extracts from them are freely quoted in his "Recollections." During the siege Dr. Fayrer received a severe contusion of the leg from a spent bullet and his eldest son, then an infant, was slightly wounded in the leg by a fragment of shell.

On the suppression of the mutiny Fayrer embarked with his family in March, 1858, from Calcutta, and during his furlough in England studied at the University of Edinburgh with a view to taking the M.D.; this he did after a special examination in March, 1859. In the January of the same year he was elected a Fellow of the Royal Society of Edinburgh. Early in 1859 a vacancy having occurred in the chair of surgery in the Medical College, Calcutta, by the resignation of Professor O'Shaughnessy, the post was offered to Dr. Fayrer while still on furlough and was duly accepted. He returned to India, landed on April 29th, 1859, and at the age of 34 years took up his appointment as professor of surgery in the Medical College and first surgeon to the College Hospital, and thus commenced the second part of his Indian career. In the following year he was given the additional medical charges of the Lower Military Orphan School and of the Mysore princes. In January, 1861, he was elected a member of the Council of the Asiatic Society of Bengal and shortly afterwards a Fellow of the University of Calcutta. In 1863 he was elected a member of the Senate of the University and President of the Faculty of Medicine. In January, 1867, he was appointed President of the Asiatic Society and delivered an address on taking his seat. In this capacity he wrote to the Government recommending that a scientific mission should be sent to Abyssinia and to the Nicobar Islands and proposed a scheme for a zoological society and gardens in Calcutta, which was recommended to be carried out.

On Lord Mayo's arrival on Jan. 12th, 1869, he invited Dr. Fayrer to become his surgeon, which offer he accepted for as long a time as the Viceroy should remain in Calcutta. He at that time submitted a long memorandum upon the native hospital for Lord Mayo's information and was frequently consulted by him on all medical matters connected with the service or the local hospitals. It was about this time that Dr. Fayrer was promoted to the rank of surgeon-major and was appointed consulting surgeon to the Howrah General Hospital. On Dec. 29th, 1869, at a Chapter of the Star of India held at Calcutta, in which the Duke of Edinburgh was invested as a Grand Commander of the Star of India, Dr. Fayrer rode with the other Companions of the Order, having been made a Companion the previous year. On Jan. 1st, 1870, the Viceroy invited him to accompany the Duke of Edinburgh in his travels through the North-west of India. His Royal Highness subsequently made him his physician in ordinary. In the March of the same year he was made honorary physician to the Queen. At this time he was investigating the nature of the poisons of the ophiophagus elaps, the different species of bungarus, and of the salt-water snakes. The results of his experiments were sent home in the rough to his friend Dr. Francis C. Webb, in London, who put them into the form of a book, which was afterwards published by the Government. An acknowledgment of Dr. Webb's work is made in the introduction to the volume, which is entitled the "Thanatophidia of India." This great work, which was dedicated to the ill-fated Viceroy, was the result of his extensive experimental study into the action of snake-poison. Dr. Fayrer's attention had long been fixed on this matter owing to the appalling mortality amongst natives from this cause. The book was magnificently produced and illustrated by beautiful plates, mostly drawn by native members of the Calcutta School of Art. Dr. Fayrer also devoted much attention to the means of checking the loss of native life and property from the ravages of carnivorous animals.

Early in 1873, a year after Lord Mayo's assassination in the Andaman Islands, Dr. Fayrer prepared for a long absence from India, his health having suffered from the climate. During his furlough he was elected a Fellow of the Royal College of Physicians of London and with Lauder Brunton began a series of investigations into the nature and action of snake-poison. In the same year he was appointed a member of the Medical Board at the India Office, of which Sir Ranald Martin was the president. In November, 1873 Sir Ranald Martin sent in his resignation as president and Dr. Fayrer was offered the appointment by Lord Salisbury, Secretary of State for India. He retired from the active list of the Indian army as a deputy surgeon-general, with a pension of £1 a day, and on Dec. 8th took his seat as president. He was also appointed a member of the Senate of the Army Medical School and a little later a member of the Army Sanitary Committee. He was gazetted a surgeon-general with local rank, which rank was ultimately confirmed on his retirement from the India Office.

In March, 1875, General Probyn interviewed him about the Prince of Wales's projected visit to India; the Prince had expressed a wish that Dr. Fayrer should accompany him, and Lord Salisbury desired to know if he would undertake the duty. He did so with pleasure and wrote a memorandum for the Queen and for Lord Salisbury on the Indian climate. In April he visited the Prince at Sandringham and in August he was commanded by the Queen to go to Osborne, when he reassured Her Majesty on the safety of the expedition and undertook the full responsibility that it entailed. The Prince with his suite left London on Oct. 9th and embarked on the *Serapis* at Brindisi on the 16th. Of the great and memorable tour through India an interesting account is given in Dr. Fayrer's "Recollections," where he tells of the careful way in which the tour was arranged on his advice so as to avoid cholera and other dangers due to climatic causes. When at Lucknow he took the opportunity of showing the Prince the shot-riddled remnants of that house which 18 years before he had so heroically helped to defend. It was at Dholepore, on the return from visiting the rock-fortress of Gwalior, that the Prince told him that a telegram had come to the Viceroy from the Queen saying that he (together with Probyn and Browne) was to be made a Knight Commander of the Star of India. His Royal Highness subsequently held a Chapter of the Order at Allahabad and invested him with the insignia. They left Bombay on March 13th and on the return journey visited Cairo, Malta, Gibraltar, and Madrid where they were received by King Alfonso. On May 10th the Prince presented Sir Joseph Fayrer with some valuable souvenirs of the expedition, among them a gold bracelet set with diamonds, with his portrait, for Lady Fayrer. On May 11th the *Serapis* entered Portsmouth Harbour and on the following day he attended the drawing-room with his wife, when all the suite were presented to Her Majesty by the Prince. His name also appeared in that day's *Gazette* as Honorary Physician to the Prince of Wales. In 1879 his journal while with the Prince was published for private circulation.

In April, 1877, Sir Joseph Fayrer was selected as one of the 15 new Fellows of the Royal Society. In conjunction with Dr. (now Sir) Lauder Brunton he had read a paper before the society on the Physiological Action of the Poison of Naja Tripudians which is recorded in the Proceedings; he became a member of the council in 1895. In 1880 he was chosen by the Secretary of State for War to succeed Mr. Busk as examiner in anatomy and physiology at the examination for admissions to the Medical Services, an appointment he held for some years. In the November of 1882 he was elected a governor of Guy's Hospital and later a governor and consulting physician to the Italian Hospital in London. During this period he had an extensive consulting practice which was naturally largely amongst Anglo-Indians. In the August of 1883 he was deputed to represent the Indian Government at the International Congress at Amsterdam. He there read a paper, written conjointly with the late Sir Joseph Ewart, in French, on the Treatment of Tropical Diseases in Temperate Climates. In the May of the next year he commenced giving clinical lectures at Charing Cross Hospital upon Liver Abscess and Tropical Diarrhœa. It was in the same year that the Prince of Wales invited him to be a Royal Commissioner for the Indian and Colonial Exhibition to be held in 1886. In May and June he represented India both technically and diplomatically at the International Cholera Congress held at Rome, and in December he represented the Royal College of Physicians, and the University of Edinburgh at the tercentenary of Galileo at Padua, in the great hall of whose University he addressed the assembly in Italian. The University conferred on him the honorary degree of Doctor of Philosophy. On his retirement from the India Office the officers of the Medical Services, at the suggestion of Major W. W. Webb, I.M.S., who acted as honorary secretary to the movement, invited him to sit for his portrait to be placed in the mess at Netley. It was painted by Sydney Hall in 1896 and was unveiled by Lord Wolseley. On Jan. 8th, 1895, he attended his last board at the India Office and on the 12th retired with a superannuation allowance of £300 a year. Later he was accorded a good service pension of £100 a year. In January, 1896, the Prime Minister informed him that the Queen had conferred a baronetcy on him in recognition of the position which he had attained in his profession and of his long services.

Sir Joseph Fayrer was a prolific writer. In addition to

the publications already mentioned, there came from his pen the following works and articles of note: "Clinical Surgery in India" (1866); "Osteomyelitis and Septicæmia" and the "Nature of Visceral Abscess" (1867); "Fibrinous Coagula in the Heart and Pulmonary Artery as a Cause of Death after Surgical Operations" (1867); "Clinical and Pathological Observations in India" (1873); "Tropical Diseases" (his Lettsomian lectures and other papers on cognate subjects), (1881); "The Climate and Fevers of India" (his Croonian lectures at the College of Physicians of London), (1882); "Venom, Effects of: Venomous Animals" (Quain's "Dictionary of Medicine," 1882); "Epidemiology of Cholera" (1888); "Sunstroke," "Climate," and "Fevers of India" (Allbutt's "System of Medicine," 1894); "On Preservation of Health in India" (1894); "Sir Ranald Martin" (1897); "The Hill Stations of India as Health Resorts" (*British Medical Journal*, 1900); "Recollections of my Life" (1900); "Tropical Abscess of Liver" (Murchison's "Lectures on Diseases of the Liver," third edition); "Liver Abscess"; "Tropical Diarrhœa" and "Sunstroke" (Davidson's Hygiene of Warm Climates); and "Natural History of the Tiger." He was also an admirable linguist and he devoted much of his spare time to languages. In India Burmese, Urdu, and Persian, the last being the language of official correspondence with the Court of Lucknow, occupied his attention; in Europe the study of Italian was a favourite relaxation, while he was a good French scholar. Sir Joseph Fayrer was associated with most of the learned societies of the day. We have already recorded his election as a Fellow of the Royal Society and also as a Fellow of the Royal Society of Edinburgh. While a student he was elected a Fellow of the Royal Geographical Society, a corresponding member of the Zoological, and a member of the Hakluyt Societies. He subsequently became a Fellow, member of the council, and Vice-President of the Zoological Society, a Fellow of the Royal Medical and Chirurgical Society, and a member of the Pathological Society, to the membership of the council of which he was elected in 1880. He was also at one time President of the Medical Society and was President of the Epidemiological Society during the years 1879 and 1880. In 1885 he was elected a corresponding member of the Academy of Medicine of France and later was promoted to be a foreign associate. In the same year he was made an honorary corresponding member of the Société d'Hygiène Publique of Paris and an honorary member of the Royal Academy of Medicine of Rome. He was also a foreign corresponding member of the Royal Academy of Science of Lisbon and a Fellow of the Academy of Science and College of Physicians of Philadelphia. Taking a great interest in sanitary science, he became President of the Association of Medical Men holding Sanitary Science Diplomas, afterwards called "The Royal Society of Public Health." In 1878 he received the honorary degree of LL.D. from the University of Edinburgh and 12 years later the University of St. Andrews honoured him with a similar degree.

Sir Joseph Fayrer's interest in education was continued throughout his life. In addition to his direct interest as a teacher in the Calcutta and Charing Cross Medical Schools he took a lively interest in the welfare of many other educational establishments. He was a governor of Wellington College and of Epsom College of which latter institution he was appointed a member of the council in 1877 and subsequently chairman; to this College he had previously handed over as a thank-offering, all his prize money and batta for Burmah, and the batta and 12 months' prize-money for the defence of Lucknow. For many years the welfare of the Army Medical School at Netley greatly occupied his time and thoughts. He distributed the prizes on more than one occasion and was a regular attendant at the meetings of the senate and at the gatherings which closed the different sessions of the school as long as he remained in office. After his retirement he visited the school and addressed the young officers at the close of the sessions as often as his health permitted him. He for years gave a prize.

Sir Joseph Fayrer will be remembered in after years as a great official and as one with whom his professional calling was ever first. In Calcutta he was deservedly regarded as a great surgeon, and this reputation might have been continued and extended in this country, but having in 1872 become a Fellow of the Royal College of Physicians of London etiquette forbade his undertaking any work of the kind. In 1881 he delivered the Lettsomian lectures on Dysentery. He was the Croonian lecturer in 1882 and a member of the council of the College of Physicians in 1886. He was a consulting physician and governor of Charing Cross Hospital. The medical officers of the military and naval services owe a great debt of gratitude to Sir Joseph Fayrer, and by them his name will ever be held in special honour; by his own life and actions he consistently supported the dignity of the medical officer and his calling, as, indeed, he did that of the whole profession of medicine.

Sir Joseph Fayrer was all his life through a keen sportsman, which proclivity was inherited from, and fostered by, his father. In India he killed a great number of tigers and much other game, especially in the Teral, where he made expeditions in 1855, 1857, and again with the Prince of Wales. After his retirement from India almost every year he shot and fished at Dunrobin with the Duke of Sutherland and at St. Mary's Isle with Lord Selkirk. In 1877 he wrote a paper for *Nature* upon the subject of the towering of birds, in which he ascribed it to asphyxia from bleeding of the lungs, and not necessarily from injury to the head, as commonly supposed. In the following year he gave a lecture on the destruction of life in India by snakes and wild animals at the Society of Arts. His paper not only dealt with the mortality but with the animals that caused it. For it he was awarded a silver medal by the society. After his retirement from active work he passed his time between his house in Devonshire-street and Falmouth, of which latter place he had a great opinion as a winter resort. At Falmouth he devoted much time to boating and deep-sea fishing and up to the last he maintained a keen and active interest in these sports.

In appearance Sir Joseph Fayrer presented the physical characteristics of the sturdy Briton and his manners were in keeping with his looks. Although so frequently the companion of Royal personages and a *persona grata* in Courts he in no respect fulfilled the popular idea of the courtier. He was gently dignified, blunt, humorous, and no great respecter of persons. An admirable talker, he required drawing out, and it was especially to the questions of young men that he responded most sympathetically. The record of his life shows that he possessed intense personal bravery, both physical and moral, and his career as well as his qualities of mind and body tended to make him take a broad and wide view of things. There was nothing of the learned professor about him. He was superlatively well read in medical and general literature, and excellently versed in that knowledge which cannot be gained from books—knowledge of human nature—but his attitude in argument and general conversation was a modest and unobtrusive one; it was impossible not to feel that he spoke only when he was quite sure of his ground, and then never for effect but always on the side of justice or humanity. The record of his work and public services which we have given shows that the world has lost in Sir Joseph Fayrer a distinguished man of science and a successful and energetic man of affairs; those who knew him are regretting a friend of the kind that cannot be replaced.

Sir Joseph Fayrer married in the cantonment church at Lucknow, on Oct. 4th, 1855, Bethia Mary, the eldest daughter of Brigadier-General Andrew Spens, who was then commanding the troops there, and by her, who survives him, had a family of six sons and two daughters. The marriage proved an exceedingly happy one and to his wife "in remembrance of 45 years spent together" in 1900 he dedicated the "Recollections of my Life." To her in her bereavement and to her children we offer our sincerest sympathy and these "in memoriam" notes of a life in all respects well spent. His eldest son Robert Andrew Fayrer predeceased him and his second son, Lieutenant-Colonel Joseph Fayrer, R.A.M.C., succeeds to the baronetcy. The next son is a colonel in the Ghoorkas and the youngest is a member of the Royal Army Medical Corps.

JOSEPH GROVES, B.A., M.B. LOND., L.R.C.P. LOND., J.P.,

MEDICAL OFFICER OF HEALTH OF THE ISLE OF WIGHT RURAL DISTRICT.

BY the death of Dr. Joseph Groves one of the foremost practitioners and certainly the foremost local champion of public health is lost to the Isle of Wight. Dr. Groves's death was due to overwork and the recrudescence of an old lung trouble which dates back, as to its genesis, quite 40 years. A King's College man in the days of William Fergusson, Richard Partridge, Robert Bentley Todd, and George Johnson, his early training was associated with

the teaching of a day when public health as a science had not yet come into its kingdom. Yet so young did his mind remain and so receptive was he to each "new thing" that official recognition of public health as the foremost need of the hour found Dr. Groves fully equipped for the office which he sought and held as rural medical officer of health of the important district of the Isle of Wight for the last 25 years, and though his private practice was large it will be by the work of that official position that he will be chiefly remembered in the island; indeed, it would be well-nigh impossible to forget that work. Devotion hardly describes his toil therein and fearlessness and independence are almost inadequate words whereby to paraphrase his public conduct. And he did not lack honours, though he did not greatly seek them; indeed, like the Shunamite, he seemed to value most the appreciation of his "own people," but other praise and commendation were his for all that. He was the vice-president of the Section of State Medicine when the British Medical Association met in Canada and was intimately identified for many years with much of the work of that association. He was also a past President of the Incorporated Society of Medical Officers of Health. He was a London graduate, held many appointments at King's College Hospital in his post-qualified days, saw the cholera epidemic of 1866 through (with Conway Evans), then travelled for a short time and finally settled down in the island of which he was a son—coming as he did of an old Vectian family—and lived and toiled and died at his beloved Carisbrooke on May 21st. In local life and local endeavour his name was always first and his influence ever a good influence. To name all he did for those "sons of men" whose local contemporary he was would hardly be understood or appreciated outside the environment in which his tender sympathy was exercised and felt. He leaves one of those blanks in the life of his late home which make men pause and wonder as to how any other man will now fill it. Dr. Groves was aged 68 years and was unmarried.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Wm. B. Fletcher, formerly professor of neurology and mental diseases in the University of Indiana.—Dr. O. F. Roler, formerly professor of midwifery in the North-Western Medical School, Chicago.—Dr. Wm. H. Drummond, professor of forensic medicine in Bishop's College, Montreal.—Dr. H. Jordan, professor of midwifery in the University of Cracow.—Dr. Theodor von Jürgensen, professor of medicine in the University of Tübingen, aged 67 years. He was the author of a manual of Special Pathology and Therapeutics and of a considerable number of papers and articles in medical encyclopædias on acute infectious diseases and heart and lung affections.—Dr. Ivan Nasiloff, formerly professor of operative medicine in the St. Petersburg Military Medical Academy.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in May the following candidates passed in the subjects indicated:—

Surgery.—R. Beesley (Sections I. and II.), Manchester; H. S. Burnell-Jones (Section II.), Cardiff, Leeds, and London Hospital; S. A. Mahmood, Middlesex Hospital; E. Moir (Sections I. and II.), Manchester; C. C. Morrell (Section II.) and G. H. Rodolph (Sections I. and II.), London Hospital; and S. H. Watton (Section II.), Manchester.

Medicine.—E. V. Connellan (Section I.), Bristol; J. Cree, Belfast; F. M. Cunningham (Section I.), Royal Free Hospital; R. Spears (Sections I. and II.), University College Hospital; and E. E. C. Vollet (Sections I. and II.), Paris.

Forensic Medicine.—C. L. Driscoll, Charing Cross Hospital; H. B. Middlebrooke, London Hospital; and E. H. Paterson, Guy's Hospital.

Midwifery.—H. W. Phillips, Manchester; W. P. Pinder, Leeds; E. W. Squire, St. Mary's Hospital; and G. L. Walker, Leeds.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: H. S. Burnell-Jones, S. A. Mahmood, E. Moir, C. C. Morrell, R. Spears, and E. W. Squire.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College:—

F. J. Cahill, L.R.C.S.I., &c.; R. H. Dickson, L.R.C.S.I., &c.; T. W. A. Fullerton, B.Ch., &c., R.U.I., Major I.M.S.; P. E. Hayden, L.R.C.S.I., &c.; H. Stokes, B.Ch., &c., Univ. Dub.; and P. D. Sullivan, L.R.C.S.I., &c.

The following candidates have passed the primary part of the Fellowship examination:—

W. F. O'Connor, B.Ch., &c., R.U.I.; Miss E. R. Benjamin, R. Charles, F. J. Colgan, E. A. Gregg, P. M. J. Power, and R. S. White.

His Majesty the King has sent a gift to the Royal Waterloo Hospital for Children and Women, S.E., in the shape of a quantity of cast linen.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The annual meeting and conference were held at 11, Chandos-street, London, W., on May 22nd, Dr. Leslie Roberts, the President, being in the chair. Upon the completion of the usual business formalities an oration was delivered by Professor Dr. Lassar of Berlin, who chose for his subject, "The Relationship of Dermatology to the Other Branches of Medical Science." The lecture was illustrated by a series of beautifully coloured lantern slides. The annual dinner of the society was held the same night at the Imperial Restaurant, the distinguished orator of the afternoon being the chief guest.

UNIVERSITY OF CAMBRIDGE.—Mr. Adam Sedgwick has been reappointed a manager of the Balfour Fund for Animal Morphology.—A course in Systematic Botany will be given during the long vacation in the new botany school, beginning on July 6th.—It is proposed to establish a university diploma in anthropology for advanced students and graduates who have pursued the subject under the direction of the Board of Anthropological Studies.—An exhibition of £50 a year for two years is offered by Emmanuel College for an advanced student pursuing a course of research in the University. The student will have to begin residence in October, 1907.

DONATIONS AND BEQUESTS.—By the will of Mrs. Stephanie of Hampstead the Middlesex Hospital will benefit by a sum of £1050, and Charing Cross Hospital, the North London Hospital for Consumption, the Victoria Hospital for Children, Guy's Hospital, St. Mary's Hospital, and the Hampstead Hospital and Nursing Institute will each receive £1000. £500 each have been left to the Kilburn Dispensary, Brompton Hospital for Consumption, Royal Hospital for Incurables, and the French Hospital, while the Surgical Aid Society and the Freidenheim Hospital will receive £250 each for charitable purposes. Subject to other legacies, the testatrix left the residue of her estate to the following hospitals: the North London Hospital for Consumption, Charing Cross Hospital, Victoria Hospital for Children, Middlesex Hospital, Guy's Hospital, St. Mary's Hospital, and Hampstead Hospital. The amount available for charitable purposes will be about £16,000.—Mr. William Young of Peebles has by will bequeathed land the value of which is about £12,000 to the town council of Peebles for the purpose of founding a sanatorium for the treatment of pulmonary tuberculosis.

THE IMPROVEMENT OF ROME.—Mr. Morgan, the British Consul, in his annual report, just received at the Foreign Office, states that after a somewhat protracted period of economic depression Rome has awakened to a new existence. Within the brief period of 37 years the city has been almost rebuilt, and by comparing a map of 1870 with one of the present time it can be seen at a glance that its topography has altered considerably. The population at present is believed to be about 520,196, the number of foreigners being nearly 10,000, including some 1800 British. The pretty small towns and villages near Rome are now served by a regular electric tramway service. The country is being gradually opened up and symptoms of activity are everywhere discernible. The two railway stations in Rome, known as Termini and Trastevere, are to be shortly connected by means of a direct line. The death-rate has decreased considerably since 1871, as will be seen from these figures: 1871, 41·8 per 1000 inhabitants; 1875, 33·9; 1879, 25·1; 1883, 24·3; 1887, 22·8; 1891, 20·9; 1895, 19·2; 1900, 19·0; and 1905, 20·6. The former scourge of the district of Rome was malaria. Improved sanitation and the measures everywhere adopted in order to avoid infection through the dreaded mosquito have largely contributed to reduce the rate of mortality from that disease. The deaths from malaria were 189 in 1893, 189 in 1895, 73 in 1897, 87 in 1899, 76 in 1901, 46 in 1903, and 65 in 1905. The Vice-Consul at Civita Vecchia

says that the position of that bathing resort is gradually improving. The waterworks are now ready and a plentiful supply of good drinking water is available. As a scarcity of water was the chief reason why visitors shunned Civita Vecchia during the summer months it is hoped that the town will again become the favourite watering-place of the Romans.

THE COLONIAL NURSING ASSOCIATION.—On the invitation of the Duke and Duchess of Westminster a meeting of the Colonial Nursing Association will be held on June 14th at 3.30 P.M. at Grosvenor House. Princess Henry of Battenberg, the patroness of the association, has signified her intention of being present, and Lord Ampthill will preside. The speakers will include the Right Hon. Austen Chamberlain, M.P., the Right Hon. Sir George T. Goldie, and Sir Francis Hopwood.

LONGEVITY.—Mrs. Honor Coleman of Cleeve, Somerset, is perhaps the oldest woman in England, having recently attained the remarkable age of 107 years. Her mother was a centenarian, as was her grandmother who lived to the age of 101 years, while her daughter who lives with her is nearly 80 years of age.—The Rev. John Aldis of Beckington, Somerset, entered his 100th year on May 12th.—Mrs. Metherell of Tavistock, Devonshire, attained the 103rd anniversary of her birthday on May 21st.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE FRIENDLY SOCIETY.—The report of this society for 1906 was presented at the general meeting of the members held on May 23rd. At the end of 1906 there were 2488 members, being an increase of 59 during the year, all being male members of the medical profession or Licentiates of Dental Surgery practising in the United Kingdom. The funds increased by more than £12,000 and now amount to £208,357. The amount paid in sickness benefit during the year was £11,494, being the largest yet disbursed in one year. The annual premium income in this branch is £15,302. The management expenses are low and there is a large balance to the credit of the management fund—viz., £13,469. We should have preferred to see the interest on this sum set out more clearly but it is no doubt included in the investment fluctuation reserve fund which amounts to £12,966. A full list of the assets is given and it is interesting to notice the large amounts invested in Australian stocks.

THE PREVENTION OF PULMONARY TUBERCULOSIS.—A conference of representatives of the metropolitan borough councils on the question of taking measures to limit the spread of pulmonary tuberculosis will be held at the Paddington town hall on Thursday, June 6th. Notice of the following motion has been given by Councillor W. J. Nolan of Paddington:—

(*a*) That it is desirable that the notification of pulmonary tuberculosis (consumption) should be compulsory. (*b*) That application be made to the Local Government Board for an order to be made—(i.) To include pulmonary tuberculosis (consumption) among the diseases to be notified under Section 55 of the Public Health (London) Act, 1891; and (ii.) to extend the provisions of the following sections of the above Act to pulmonary tuberculosis (consumption)—Section 60, cleansing and disinfecting of premises, &c.; Section 61, disinfection of bedding, &c.; Section 62, infectious rubbish thrown into ash-pits, &c., to be disinfected; Section 63, penalty on letting houses in which infected persons have been lodging; Section 64, penalty on persons letting houses making false statements as to infectious disease; Section 65, penalty on ceasing to occupy house without disinfection or notice to owner or making false answer.

And further—

That the President of the Local Government Board be asked to receive a deputation from the conference in support of the resolution (if adopted).

The propositions include a further motion on behalf of the Poplar borough council:—

That, in the opinion of this conference, it is desirable, in order to limit the spread of pulmonary tuberculosis, provision should be made for public inspection and control at its several sources of the milk-supply of London.

We have before us an excellent report issued to the Paddington public health committee at the beginning of this year by Dr. Reginald Dudfield, medical officer of health of the borough. In this he gives a good account of the etiology of, and rational means of combating, tuberculosis, and adduces cogent reasons in favour of compulsory notification of at least the pulmonary form of the disease in order to limit its spread. The pamphlet would appear to have borne good fruit and although we think that the evidence in favour of compulsory notification is at present insufficient to justify its general adoption we hope that the deliberations of the borough councils' representatives may have beneficial results; the awakening of public interest in these matters of national health is an excellent sign of the times, and the exertions of medical officers of health cannot be more profitably directed than in instructing the public on their grave importance.

THE ROYAL WATERLOO HOSPITAL.—The Festival Dinner Committee has announced that the net proceeds of the dinner at the Savoy Hotel on May 14th last would exceed £1100.

HOLIDAY GUIDES.—The municipal authorities of several of the English health resorts now issue free guides to their respective towns, which can be obtained from the town clerks by forwarding on a post-card a request for a copy. These guides are admirable productions both from the literary and pictorial points of view, and are valuable aids in the selection of a suitable holiday resort. We have received specimens of the guides issued by the local authorities of Bournemouth, Hastings, Leamington Spa, Southwold, Tenby, and Weymouth.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Compensation for Industrial Diseases.

THE Departmental Committee on Compensation for Industrial Diseases has just issued an elaborate and interesting report. This Committee was appointed by the Home Secretary in August, 1906, to inquire and to report "what diseases and injuries other than injuries by accident are due to industrial occupations, are distinguishable as such, and can properly be added to the diseases enumerated under the third schedule of the Workmen's Compensation Act, 1906." The members of the Committee were Mr. HERBERT SAMUEL, the Parliamentary Under Secretary of State for the Home Department (chairman); Professor T. CLIFFORD ALLBUTT of Cambridge; Mr. H. H. CUNYNGHAME, C.B., Assistant Under Secretary, Home Office; and Dr. T. M. LEGGE, medical inspector of factories. After prolonged investigation the Committee recommends that a large number of industrial diseases should be added to the third schedule of the Act, thus entitling workpeople who contract them in the course of their employment to compensation.

It may be explained that Section 8 of the Workmen's Compensation Act permits the Home Secretary to include additional diseases in the third schedule from time to time. Compensation is to be paid to a workman who is found to be suffering from a scheduled disease, and if the workman has been employed in any process mentioned in the schedule opposite to that disease, then, in the ordinary course, the disease shall be deemed to be due to the nature of that employment unless the employer proves the contrary. The members of the Committee have summarised their recommendations in a tabulated form.

If the Home Secretary acts on the advice of the Departmental Committee compensation to workpeople incurring these diseases in the ordinary nature of their employment will be payable in exactly the same manner as in the case of anthrax, lead poisoning or its sequelæ, mercury poisoning or its sequelæ, arsenic poisoning or its sequelæ, and ankylostomiasis incurred in mining. These are the diseases which already appear in the third schedule of the Act. In recommending the numerous additions to the schedule the Departmental Committee mentions that some of the diseases are seldom seen by medical men and occasionally difficulties of diagnosis may arise. It thinks it most desirable that the medical referees, who will be appointed to adjudicate on medical points in disputed cases, should be specialists with particular knowledge and experience of these diseases.

The Whitsuntide Holidays.

The House of Lords resumed on Tuesday last after the Whitsuntide holidays. The House of Commons re-assembled on Thursday, May 23rd.

The Butter and Margarine Bill.

One of the Standing Committees of the House of Commons had the Butter and Margarine Bill under consideration on Monday. Sir EDWARD STRACHEY, who represents the Board of Agriculture in the House of Commons, induced the committee to accept amendments reclassifying the substances dealt with in the Bill. As originally drafted the Bill took cognisance of pure butter, milk-blended butter, butter substitutes or imitation butters, and margarine. Sir EDWARD STRACHEY explained that the effect of his amendment was to have one butter substitute only and that to be what was now known as milk-blended butter. All other imitation butters were to come under the definition of margarine. Some discussion arose on the moisture clause which limits the

proportion of water in butter and margarine to 16 per cent. and in butter substitutes to 24 per cent. Sir FRANCIS LOWE moved an amendment to limit the proportion of water in milk-blended butter to 16 per cent., on the ground that a higher percentage of moisture in it would lead to the perpetration of fraud on the consumer. In the course of the discussion Sir EDWARD STRACHEY intimated that the regulations of the Board of Agriculture would be framed to prevent this substance being sold under the title of milk-blended butter. Whilst they did not object to the sale of an article demanded by the public, yet they objected to the name "butter" being used in the description of it. This amendment had not been voted upon when the committee rose for the day.

Purity of Milk Supplies (Scotland) Bill.

Mr. WATT has introduced into the House of Commons a Bill to insure the purity of the milk-supplies of the rural and urban districts of Scotland. It was read a first time.

HOUSE OF COMMONS.

THURSDAY, MAY 23RD.

Municipal Milk Depôts.

Mr. RIDSDALE asked the President of the Local Government Board whether he could state the cost of installation and of working and the receipts of any municipal milk depôts for which figures might be available.—Mr. J. BURNS gave a long and elaborate written reply relating to municipal milk depôts in Battersea, Lambeth, Woolwich, Bradford, Burnley, Liverpool, St. Helens, Ashton-under-Lyne, and Dukinfield. In the case of Battersea the cost of the installation was set down at £659. For the year ended March, 1907, the receipts were estimated at £796 and the expenditure at £1256. The cost of adapting premises in Lambeth for a milk depôt and of fittings and utensils was £881. During last year the receipts from it were £236, whilst the expenditure was £460. In Woolwich the cost of installation was £653, but only been open since November. At Bradford the cost of machinery, fixtures and fittings was £444 and for the year ended March, 1907, the receipts were £1974 and the expenditure £1868. The Burnley depôt was opened in 1905, the installation costing £390. For the last financial year the receipts came to £425, but the expenditure was £640. In the case of Liverpool the costs of installation were included under the expenditure of the year. The figures of receipts and expenditure were as follows:—

Year.	Receipts.	Expenditure.
	£	£
1901	518	2000
1902	1535	4335
1903	2231	4259
1904	1676	3654
1905	1644	3632
1906	1250	3206

At St. Helens the cost of installation was returned at £391, and the depôt had been working for seven or eight years. In the year ended March, 1907, the receipts amounted to £78. The expenditure for the same period was £256. At Ashton-under-Lyne the receipts of the municipal milk depôt during the last financial year amounted to £449, whilst the expenditure on it came to £569. At Dukinfield the milk depôt was closed after an existence of two years.

FRIDAY, MAY 24TH.

The Vaccination Bill.

Mr. J. A. PEASE (on behalf of the President of the Local Government Board) formally moved the second reading of the Vaccination Bill.

Sir JOHN BATTY TUKE moved the rejection of the measure. He said that he objected to the Bill because it was illogical. It would neither meet the views of the anti-vaccinationists nor of the vaccinationists and it would afford increased opportunities for evading the law, and this would become a danger to the public health. The Bill, if it became law, would have the effect of increasing the anti-vaccination agitation and also the number of the extremists. It would not affect the honest objector to vaccination, for he was at present willing to sacrifice himself and to take trouble to vindicate his opinions. It was unluckily the case that even the honest conscientious objector dragged in his train a large number of persons who had no settled convictions on the subject of vaccination, such as ignorant parents and guardians. This class, he feared, would soon become a dangerous element. Soon it would be declared that the Vaccination Acts had become dead. At present small-pox was in abeyance, but as sure as the sun would rise to-morrow small-pox would reappear in an unprotected community. A large portion of it would be unvaccinated and when an epidemic of small-pox broke out there would be a rush of persons to be vaccinated and then it would be found that the local authorities were unable to meet the demand. He often wondered whether the antivaccinationists had ever seen an epidemic of small-pox among an unprotected community. If they had gone through this experience, as he had done on more than one occasion, they could not fail to realise the horrible condition of things that ensued from the outbreak of small-pox. With few exceptions all civilised countries had adopted vaccination with great advantage. In these circumstances was the Government justified in bringing forward a measure which sapped at the very foundations of the Vaccination Acts? The President of the Local Government Board was, at the instance of a small section of the community, throwing the responsibility on the shoulders of the illiterate but in the long run the responsibility for what would happen must fall on the right honourable gentleman himself. It must, however, be admitted that the time had come for a revision of the working of the law on this subject. He therefore suggested that the present Bill should be abandoned and a small representative committee appointed to consider the subject. Such a committee, he hoped, might arrive at a *modus vivendi*, which would be the foundation of a Bill acceptable to all sides.

Mr. CAVE seconded the motion for the rejection of the Bill. He believed that the Bill would not effect a settlement of the vaccination question. The measure was regarded by anti-vaccinationists as an instalment leading up to the larger policy of the abolition of the vaccination law. It was beyond controversy that vaccination was a real protection against small-pox and against a fatal termination to the attack of the disease when it did occur. The effect of the Bill was to make it much easier to obtain exemptions. If they made the process of obtaining these exemptions as much easier as the Bill proposed they would have persons in all classes either from mere carelessness or from unwillingness to undergo trouble, signing the proposed statutory declaration. The result would be that the number of exemptions would be very seriously increased. By passing the Bill they would be running the great risk of exposing the public to a great increase of a very dangerous and loathsome disease.

Mr. BURNS (the President of the Local Government Board) said that he had earlier in the session promised certain alterations in respect to vaccination. The first thing was a reduction in the cost which in recent years had been unduly inflated. Only in the course of the present week he had issued a Vaccination Order carrying out to the full the pledge he had given on this point. Then he had promised some form of statutory declaration in place of the existing exemption certificate. The Bill now under consideration gave effect to that promise. He had further promised that the Government would do its best to secure uniformity of action by the magistrates pending the adoption of the other measures promised, and the Home Secretary had issued a circular advising magistrates not only to be more discreet but also more reasonable and uniform in the administration of the law relating to exemptions. He had further undertaken that the Government would consider the possibility of transferring the whole administration of vaccination from the boards of guardians to the public health authorities. However, until the Royal Commission which was inquiring into the Poor-law reported he could not carry out, as he should like to do, the transfer. Finally, he promised that they would consider the question of suspending vaccination in early infancy and postponing it until a later period of life. However, until the two sets of opinion represented respectively by the honourable Member for Sleaford (Mr. Lupton) and the honourable Member for Edinburgh and St. Andrews Universities (Sir John Batty Tuke) reconciled themselves more amicably on other phases of vaccination, he could not see a way to redeem this promise. Proceeding, the right honourable gentleman said that it must be a subject of congratulation to everybody that the terrible scourge of small-pox was diminishing, and it was gratifying to know that in the year 1906 there were in England and Wales only 21 deaths from this disease, and that in London, with a population of 5,000,000, there was not a single death from the disease. The object of the Bill now under debate was to bring about an alteration in the manner of obtaining exemption from penalties for omitting to have a child vaccinated by substituting a statutory declaration for the certificate of conscientious objection required by the Act of 1898. Those who were responsible for inserting the word "satisfies" in Section 2 of that Act were to some extent responsible for the necessity of amending it now. The difficulty of administering the section had been foreseen by certain Members, whose predictions had been justified by the event. It was now admitted, even by opponents of the present Bill, that some of the magistrates had exceeded their powers. The Home Office had at last been compelled to issue circulars asking magistrates to do their duty in a way that would not give offence to applicants for exemption. Another matter of complaint under the present law was that in order to obtain a certificate of exemption parents were compelled to attend the court under a quasi-criminal aspect. The Bill substituted for the present process a simple statutory declaration before a commissioner for oaths or a justice of the peace. The parent who made such a declaration would be exempted from the stamp duty, which the Chancellor of the Exchequer had generously consented to waive. He would, however, have to pay a small fee required by the Statutory Declarations Act, 1835, which varied from a shilling to eighteenpence. It might be urged that this Bill would make the way of the conscientious objector too easy. Similar predictions were made in 1898, but, as a matter of fact, the conscientious objections since that date had remained practically stationary. It was the case that the Royal Commission had contemplated a statutory declaration of some kind and desired to call the parent before the local authority. That procedure would be more inconvenient and irritating than appearing before a justice of the peace, or a commissioner for oaths, or a stipendiary magistrate. A suggestion had been made that recourse for the purposes of the statutory declaration should be had to the registrar rather than to the commissioner for oaths and the magistrate. He saw no reason for adopting that suggestion, as the registrar was in no sense connected with vaccination and it was undesirable to create any more vested interests with regard to it. In the administration of the law with respect to vaccination they ought not to have an officer who might be supposed to be increasing his professional business by taking these declarations. It was exceedingly important to satisfy all parties that the commissioners for oaths, the magistrates, and the justices of the peace who would take these declarations under the Bill should be regarded as neutral persons and that they received their fees for the declaration and for no other purpose. In his belief, the nuisance which had grown up under the Bill of 1898 was intolerable and could not be allowed to continue. He also believed that the useful little Bill now under consideration would go a long way to remove the grievance of the conscientious objector. He trusted that it would receive the hearty sympathy of the House.

Mr. PICKERSGILL thought that the Government ought to have gone further in its legislation and have removed the neglect of vaccination altogether from the purview of the criminal law.

Sir HENRY CRAIK said that it was impossible for him to remain silent on this question in view of the fact that a large proportion of his constituents, as medical graduates of the Universities of Aberdeen and Glasgow, were interested in the matter from the point of view of medical science. He felt that the Bill was a concession to prejudice and ignorance. It left no discretion whatever in the hands of the commissioner for oaths and the justice of the peace. It substituted a secret signature for a statement of conscientious objection in the light of publicity with the aid which publicity gave to distinguish between ignorance, carelessness, thoughtlessness, or prejudice and a conscientious objection to vaccination. He feared that there would be a very serious diminution in the percentage of vaccination. Surely it was unwise to yield to the pressure of those who were in opposition to the fixed conclusions of the great mass of scientific medical opinion.

Sir FREDERICK RANBURY also opposed the second reading of the Bill. It was with regret that he saw the President of the Local Government Board yielding to the pressure of the anti-vaccinationists. This concession to them would only be made the jumping ground for further demands. The Bill, in his view, was a step towards the abolition of compulsory vaccination.

The House then divided, when there voted:—

For the rejection of the Bill, 14; against, 122; majority against rejection, 108.

Sir JOHN BATTY TUKE'S amendment being thus defeated, the motion for the second reading of the Bill was agreed to without a division.

MONDAY, MAY 27TH.

Reported Remedy for the Opium Habit.

Mr. PIKE PEASE asked the Secretary of State for India whether his attention had been called to the statement by Mr. L. Wray, director of Museums of the Federated Malay States, in regard to the new anti-opium remedy and to the results obtained from its use in Selangor; also to the statement that at the Weld-road establishment of the Selangor Anti-Opium Society, in Kuala Lumpur, from Nov. 16th to 23rd last about 400 patients had reported that they were completely cured of the habit of opium smoking; and whether in these circumstances His Majesty's Government would appoint a committee to investigate the matter.—Mr. CHURCHILL said, in reply: I shall answer this question instead of the Secretary of State for India. I have not seen the statements to which the honourable member refers, but the High Commissioner for the Federated Malay States reports that there is considerable conflict of opinion with regard to the alleged cure. The Government analyst of the Straits Settlements has been unable to find any special constituent in the plant or plants from which the decoction is prepared and it is said that the same effects have been produced by a strong infusion of tea. A further analysis is now being conducted at the Imperial Institute, and pending a report on the results it would be premature to consider the question of appointing a committee.

Motor Accidents in London.

In reply to Mr. CATHCART WASON, Mr. GLADSTONE (the Home Secretary) said: The number of accidents in the metropolis known to the police to have been caused in the streets by motor-cars, motor-cycles, and motor-omnibuses during the six months ended April 30th last is 4451. Of these accidents, personal injury resulted in 1175 cases and fatal injury in 41 cases.

TUESDAY, MAY 28TH.

The Inspection of Irish Pork.

Mr. WATT asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would insure that all carcasses of swine slaughtered in Ireland for export were inspected in accordance with the recommendation of the Local Government Board—namely, that the presence of tuberculous deposit in any degree should involve seizure of the whole carcass and organs; and, if the carcasses and organs could not be inspected by competent inspectors in Ireland, would he take steps to prevent the flesh being exported to Scotland for human food.—Mr. BIRRELL replied: The Local Government Board for Ireland has on two occasions brought the recommendation mentioned in the question to the notice of local authorities in Ireland, but the Board has no power to enforce its adoption. The inspection of meat intended for human food is a matter for the local authorities themselves. The Board has no power to prohibit the export of meat. I have no information that unfit meat is exported to Scotland, but if it be suggested that such is the case I imagine that the Scottish local authorities would have power to deal with the matter. Upon that point, however, my honourable friend should address the Secretary for Scotland.

Schools and the Dissemination of Disease.

Mr. WHITEHEAD asked the President of the Board of Education whether his attention had been drawn to the fact that when individual children were kept away from an elementary school by order of the medical officer of health their absence, by reducing the average attendance, reduced the Parliamentary grant; whether he was aware that reduction in such circumstances operated hardly upon poor districts and discouraged proper precautions against the spreading of disease; and whether steps could be taken to assimilate the administration of elementary schools in this particular to that prevailing in secondary schools where no loss of Parliamentary grant was sustained through absence caused by illness.—Mr. MCKENNA answered: The absence of individual children, whatever be the cause, necessarily reduces the average attendance of the school, but I do not think any serious loss of grant results from exclusion under medical authority—for example, the exclusion of 40 children for a week would only involve a loss of about £2 to the local education authority. The method of computing average attendance will, of course, be one of the questions demanding careful consideration in connexion with any scheme for reorganising the system of grants, but I have grave doubts whether the system at present in force in secondary schools could be applied without very considerable modifications to elementary schools.

WEDNESDAY, MAY 29TH.

The National Physique.

Captain FABER asked the Secretary of State for the Home Department whether there were any statistics to show that the national physique had bettered or deteriorated during the last ten years, in addition to the findings of the Departmental Committee recently issued.—Mr. GLADSTONE replied: I am not aware of the existence of any general official statistics on this subject. I think the deficiency is to be regretted.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week such information for gratuitous publication.*

ANNAND, W. FRASER, M.D., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Physician to the Staffordshire General Infirmary, Stafford.

BRADLEY, FREDERICK H., M.B., Ch.B. Edin., has been appointed Senior House Surgeon at the Liverpool Stanley Hospital.

COLYER, H. C., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed House Surgeon at the Royal Dental Hospital of London and School of Dental Surgery.

COOPER, R. W. C., L.D.S. R.C.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London and School of Dental Surgery.

COSTOUROS, J., M.D., L.M., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CROSBY, HARRY MAIR, M.B., C.M. Edin., has been appointed Honorary Surgeon to the General Hospital, Stroud (Gloucestershire).

CUTTRISS, W. A., L.D.S. R.C.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London and School of Dental Surgery.

FLEURY, K. P., L.R.C.P. & S. Irel., has been appointed Medical Officer for the Riverstown Dispensary District of Birr, King's County, Ireland.

JUBB, ARCHIBALD, M.D. Glasg., has been appointed Extra Honorary Physician to the Royal Hospital for Sick Children, Glasgow.

MORRIS, WILLIAM DAVID JOSEPH, M.R.C.S., L.R.C.P. Edin., L.S.A., has been appointed Medical Officer to the Cardiff Post Office (Eastern District).

PATRICK, J. KING, M.B., Ch.B. Glasg., has been appointed Extra Honorary Physician to the Royal Hospital for Sick Children, Glasgow.

RUSSELL, W. K., M.B. Glasg., has been appointed Medical Officer and Public Vaccinator for the No. 1. (Ilminster) District by the Chard (Somerset) Board of Guardians.

SIBBALD, IAN GRAHAM, M.B., C.M. Edin., has been appointed Medical Officer of Health by the Chard (Somerset) Rural District Council.

SPRAWSON, F. E., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed House Surgeon at the Royal Dental Hospital of London and School of Dental Surgery.

STEVENS, BERTRAM CROSSFIELD, M.S., M.D. Durh., F.R.C.S. Edin., L.R.C.P. Lond., has been appointed Additional Honorary Anæsthetist to the Lancaster Royal Infirmary.

SUTCLIFFE, P. E., L.D.S. R.C.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London and School of Dental Surgery.

TREASURE, WILLIAM BERSON CRAWFORD, M.D. Durh., M.R.C.S., L.S.A., has been appointed Medical Officer to the Cardiff Post Office (Western District).

VINTRAS, G. C. LOUIS, M.D. Durh., has been appointed Director of the French Convalescent Home at Brighton and of the Annexe for the Preventive Treatment of Tuberculosis.

WADE, CHARLES, L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon to the Boscastle (Cornwall) Friendly Society.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120, with board, apartments, and laundry.

BETHLEM HOSPITAL.—Two Resident House Physicians (unmarried) for six months. Salary £50, with apartments, board, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIXTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £150, with apartments, attendance, coal, and gas.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £90 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £30 a year, with board, apartments, and laundress.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £120 per annum, with board, &c. Also Surgeon and Physician to the Out-patients.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, board, &c.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £25 per annum, with board and washing.

EGYPT.—Sub-Inspector of Ophthalmic Hospitals, unmarried. Salary £500 a year.

EPSOM, LONDON COUNTY ASYLUM, Horton.—Fifth Assistant Medical Officer. Salary £150 a year, with board, apartments, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HALIFAX UNION POOR-LAW HOSPITAL, Salterhebble.—Resident Medical Officer. Salary £125 per annum, with apartments, rations, and washing.

HER MAJESTY'S HOSPITAL FOR CHILDREN (DR. BARNARDO'S HOMES), Stepney Causeway, E.—House Surgeon and Resident Medical Officer. Salary £60, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence. Also Anæsthetist.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50, with board and lodging.

INDIAN MEDICAL SERVICE.—An Examination for not less than 11 Commissions.

ISLE OF WIGHT RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £300 per annum.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon and Anæsthetist, unmarried. Salary £80, with board, lodging, and washing.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Fourth House Surgeon for six months. Salary £25, with board and residence.

MANCHESTER, UNIVERSITY OF.—Junior Demonstrator of Physiology. Salary £100, rising to £150 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and laundry.

NEWCASTLE-UPON-TYNE, CITY AND COUNTY OF.—Assistant Medical Officer of Health and Resident Medical Officer of the City Hospital for Infectious Diseases, unmarried. Salary £300 per annum, with board, lodging, &c.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician, also House Surgeon, both for six months. Salaries at rate of £60 per annum, with board, residence, and laundry.

NOTTINGHAM GENERAL HOSPITAL.—Locum Tenens for three and a half months. Salary £45, with board, lodging, and washing.

PADDINGTON INFIRMARY AND WORKHOUSE.—First Assistant to the Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse, unmarried. Salary £120 per annum, rising to £150, with board, lodging, and washing. Also Second Assistant to the Medical Superintendent of the Infirmary and Medical Officer of the Workhouse, unmarried, for six months. Salary at the rate of £72 per annum, with board, lodging, and washing.

ROYAL EYE HOSPITAL, S.E.—House Surgeon. Salary £52 10s. per annum, with board and residence.

ST. BARTHOLOMEW'S HOSPITAL.—Lectureship in Anatomy.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

THROAT HOSPITAL, Golden-square, W.—House Surgeon. Salary at rate of £75 per annum, with residence, board, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Honorary Anæsthetist.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing. Also Senior House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry allowance provided.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Withnell, in the county of Lancaster; at Hemsworth, in the county of York; and at Horsmonden, in the county of Kent.

Births, Marriages, and Deaths.

BIRTHS.

BARLOW.—On May 26th, at "Sa Maison," Somersham, Huntingdonshire, the wife of H. Cecil Barlow, M.B., L.R.C.P., M.R.C.S., of a son.

MCNEIGHT.—On May 22nd, at Thaxted, Essex, the wife of W. R. P. McNeight, M.D. T.C.D., of a daughter.

RUSSELL.—On May 25th, at Oaman House, Fortis Green, N., the wife of J. Dill Russell, F.R.C.S. Eng., of a son.

SCHOFIELD.—On May 29th, at 1, Phillimore-gardens, Kensington, the wife of S. Robert Schofield, M.B. Lond., a daughter.

MARRIAGES.

MACSHERRY—AUBRIL.—At the Oratory, Birmingham, Maurice Macsherry, L.R.C.P., &c., 72, Summerhill-road, Birmingham, to Valérie Marie Louise Aubril of Summerhill Court, Kingswinford, daughter of Louis Stanislas Aubril, Sartilly, Manche, France.

RIVIERE—OSLER.—On May 22nd, at Rosslyn-hill Chapel, Hampstead, Clive Riviere, M.D., to Henrietta Maria (Hetty), daughter of Thomas Osler, and granddaughter of the late T. Smith Osler of Hampstead.

STANWELL—GILLING.—On May 23rd, at St. John's Parish Church, Chipping Barnet, F. Skey Stanwell, M.D., to Edith Elizabeth, second daughter of Henry R. Gilling, J.P., of Sowerby, Ravenscourt Park, Barnet, Herts.

DEATHS.

GROVES.—On May 21st, at his residence, Carisbrooke, Isle of Wight, Joseph Groves, B.A., M.B. Lond., in his 63th year.

WOOD.—At Margaret-street, Cavendish-square, W., on May 25th, Caroline Augusta Charlotte, wife of T. Outterson Wood, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A MONSTROUS COUNTER-CLAIM.

AT the Greenwich county court on April 19th, before his honour Judge Willis, K.C., Mr. E. Middlebrooke, L.S.A., of Eltham, sued Mr. David T., McCulloch, of 104, Earlshall-road, Eltham, for £3 12s. 6d., fee for medical attendance, and the defendant counter-claimed for £50 damages for careless treatment and faulty diagnosis of his wife's illness, alleging that the deceased met her death from this cause. Mr. Mathew (counsel), instructed by the solicitors of the London and Counties Medical Protection Society, appeared for the plaintiff and Mr. Walton (solicitor) for the defendant. The plaintiff's claim being admitted, judgment was entered for him for the £3 12s. 6d., and his honour then proceeded to hear the counter-claim. The defendant said that he called in Mr. Middlebrooke to attend his wife in November, 1904. Mr. Middlebrooke proved from his books that he had diagnosed and treated the case as Bright's disease and Dr. John Rice deposed that he had made the same diagnosis independently. The defendant stated that Mr. Middlebrooke had diagnosed "gall-stones and a growth." After hearing the evidence his honour, in giving a judgment in favour of Mr. Middlebrooke, expressed himself in very warm terms on the defendant's conduct in raising such a counter-claim. It was a monstrous claim that should never have been persisted in. He had spoken strongly because there were always base minds ready to entertain any insinuations, but so far as his voice could help he wished it to go forward that Mr. Middlebrooke's treatment of the deceased had been skilful and proper and there was not the slightest evidence to show that any one of the defendant's statements was justified. We are glad to be able to record so trenchant a judicial pronouncement on the impropriety of such preposterous claims against medical men.

THE TREATMENT OF DIABETES.

To the Editors of THE LANCET.

SIRS,—Could any of your readers give me the name of any drug that has proved in their experience a "cure" for diabetes? The case is of the obese type and of some duration. The worst symptoms are great depression of spirits, bodily weakness, and constipation.

I am, Sirs, yours faithfully,

May 13th, 1907. M.B., C.M.

"LEONARD DE BAYER."

AN Aberdeen correspondent writes:—

"The capture of a man wanted by the Liverpool police authorities took place at Aberdeen last week, the arrest having been made through the instrumentality of a letter which appeared last week in THE LANCET. In that letter information was given that a young man, 'Leonard de Bayer,' was wanted on a charge of obtaining money by false pretences, he being in the habit of calling at hospitals and upon medical men at their private addresses and under the pretence of being connected with the firm of Bayer Co., Ltd., borrowing money which he did not pay back. A man, about 36 years of age, exactly answering the description published in THE LANCET, wearing gold-rimmed eye-glasses and dressed in a frock coat and a silk hat, arrived in Aberdeen on Thursday night. He called on the medical superintendent of the Aberdeen Royal Lunatic Asylum and produced letters of introduction from two well-known medical men in Glasgow. It was too late in the evening, however, to show him the institution. Next day the young man appeared at Marischal College and attended the Giffard lecture by Dr. Hans Drasch, Heidelberg, the well-known embryologist, who was dealing with cells and cell-formation in his course, the Science and Philosophy of the Organism. After the lecture the young man, who represents himself as a Prussian doctor, entered into conversation with the lecturer and with one of the university medical professors, subsequently accompanying the latter to his house in the west-end of the city. The professor stated that he would show the visitor over Marischal College on the following day. The professor's suspicions were aroused when the man declared himself as one of the leading medical men connected with the New York State Asylum and also as associated with the firm of Messrs. Bayer Co., Ltd., combining the professional and commercial interests. Nor did the visitor manifest the interest or knowledge expected of him on being taken through the anatomical museum, although in the anthropological museum he had a good deal to say regarding interesting specimens he had secured while in Bohemia and other countries while "doing Europe" in a motor-car. Subsequently at luncheon in the professor's house, the latter's suspicions were further aroused by the references his guest made to visits paid to eminent and Royal personages and to having been associated with the Thaw trial. Reading THE LANCET after luncheon on Sunday afternoon the professor recognised that the man wanted by the Liverpool police might be his guest of the previous day. He telephoned to the house of another medical professor with whom the young man had previously intimated he was to have luncheon that day, and the answers to inquiries revealed

the fact that the visitor was in the garden enjoying a smoke. On THE LANCET's letter having been read to him over the telephone the other professor was also convinced that the man wanted was enjoying the brilliant sunshine in the garden, peacefully smoking. Subsequently the police were informed from the asylum where the visitor was to have dined in the evening and the man was arrested at his hotel late at night. He passed the bar at the Aberdeen Police-court on Monday and was handed over to the Liverpool authorities."

A NEGLECTED TEXT.

To the Editors of THE LANCET.

SIRS,—In rejoinder to "Soberness" the name Jotham does not mean "Jot" and "Ham" but "Jehovah is upright." Also, when he says that "Jotham ran away, and fled, and went to Beer, and dwelt there," and "They go to Beer because they take to beer as a drink," he apparently does not know that "Beer" meant a "well," and that the well contained good water, as may be seen by Numbers xxi. 16, as follows: "And from thence they went to Beer: that is the well whereof the Lord spake unto Moses, Gather the people together and I will give them water." I learn that some people think that the word "God" in the line "*which cheereth God and man*" should be "gods" as the parable was addressed to the idolatrous Shechemites and that others think the word meant "nobles" or "rich"—i.e., "cheereth rich as well as poor." Yet others find an explanation in the "drink offering unto the Lord," as referred to in Exodus xxix. 40, and Numbers xv. 7. But even *sober* commentators have admitted that "These are strange words." And some have called the parable of the trees the most ancient and beautiful apologue extant.

I am, Sirs, yours faithfully,

May 27th, 1907. CEDAR.

A DIPHTHERIA PATIENT IN A PUBLIC VEHICLE.

THE district council at Brentford prosecuted a woman recently who had moved her child from one part of Brentford to another in a cab without giving any intimation to the cabman that the child was suffering from diphtheria. The defendant's husband stated that the mother herself had had the disease and there was also evidence that she had been warned by the medical man who was attending the child as to her behaviour. Before the cab used could be traced it had been twice employed by other fares. The defendant was fined £2, with costs, which was certainly not more than her reckless and selfish conduct deserved.

THE OZONAIR MACHINE.

THE commercial applications of ozone are now numerous, owing largely to the success which has attended the designing of machines which give a steady and pure supply of the gas direct from the atmosphere. Amongst the machines which produce pure ozonised air is that known as the "ozonair," by the action of an alternating electric current of high frequency on the oxygen of the air through the medium of the silent or condenser discharge. An alternating current is therefore all that is required, but if this is not available a motor transformer may be used, by which the continuous is converted into the alternating current. This machine can be made to almost any scale and, in fact, large installations have been designed for such big operations as the freeing of the air in breweries from adventitious organisms and so ensuring a pure environment and a sound beer. The machine has also been applied to the bleaching of fabrics, oils, fats and waxes, sugar, and to the purification of water-supplies. One very important feature of the ozonair machine is that the ozonised air which it produces is entirely free from irritating nitrogen compounds. The small machines, therefore, are well adapted for therapeutic requirements, as, for example, for inhalation for antiseptic treatment, and so forth. There is attached to the machine a special air filter in cases in which a very pure air-supply is demanded, as, for example, in the operating theatre. These machines are made by Messrs. Ozonair, Limited, of 27, Chancery-lane, London, W.C., at which place they may be inspected. The cost of producing ozonised air by these machines is said to be reduced to a minimum.

D. N. T. calls our attention to a method of learning the lessons to be taught by the stethoscope which is quite a useful one but by no means new. In many of the London medical schools the artifice is habitually employed.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, May 30th, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 24	29·67	S.	...	108	67	55	58	60	Raining
,, 25	30·00	N.E.	0·06	121	73	50	54	57	Fine
,, 26	30·04	N.	0·19	74	61	51	56	57	Overcast
,, 27	30·08	N.E.	...	102	69	53	55	57	Cloudy
,, 28	30·04	N.E.	...	94	58	56	55	57	Fine
,, 29	30·15	E.	...	107	57	44	45	50	Fine
,, 30	30·11	E.	...	81	55	46	48	56	Fine

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (4th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M.: Communication:—Dr. Sambon. Papers:—Dr. Bayon: The Histogenesis of Goître.—Dr. P. Weber and Dr. Bafer: Osteoliposma of Brain. Valedictory Address: The President (Dr. Pye-Smith).

WEDNESDAY (5th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M.: Specimens will be shown by Dr. Longridge, Mrs. Scharlieb, The President (Dr. H. R. Spencer), and Dr. McCann. Short Communication: Dr. H. R. Andrews: Two Cases of Pregnancy in a Rudimentary Uterine Horn. Papers:—Mr. H. T. Hicks: Primary Vaginal Embolic Chorion-epithelioma.—Dr. Griffith and Dr. Williamson: A Case of Chorion-epithelioma complicated by Hæmatometra.

THURSDAY (6th).—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos street, Cavendish-square, W.).—8.30 P.M.: Discussion on Posterior Basal Meningitis and its Relation to Epidemic Cerebro-spinal Meningitis (to be opened by Dr. F. E. Batten).

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M.: Clinical Cases.

FRIDAY (7th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8.30 P.M.: Papers:—Dr. A. W. Addinsell: Chronic Metritis.—Dr. D. Arthur: The Diagnosis of Chest Diseases by the X Rays. (Both papers will be illustrated by lantern slides.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. M. H. MacLeod: Clinique. (Skin.) 5.15 P.M.: Lecture:—Dr. B. Abrahams: How to Examine the Heart (with illustrative cases).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12 noon: Pathological Demonstration:—Dr. Low. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Low: Insects as Carriers of Disease in Tropical Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—9.30 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. Whipham); Throat, Nose, and Ear (Mr. Carson); X Ray (Dr. Pirie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. St Clair Thomson: Diseases of the Throat, Nose, and Ear. Out-patient

Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

TUESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. L. Williams: Clinique. (Medical.) 5.15 P.M.: Lantern Demonstration:—Mr. J. W. T. Walker: Methods of Estimating the Renal Function.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Dr. Russell.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10.30 A.M.: Medical Out-patient (Dr. Auld). 2.30 P.M.: Gynæcological Out-patient (Dr. Giles), Surgical Out-patient (Mr. Edmunds). Surgical Operations (Mr. Carson). 4.30 P.M.: Demonstration of Cases at the Northwood Sanatorium (Dr. J. R. Squire).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin. 4 P.M.: Special Lecture:—Mr. M. Morris: Rare Skin Affections.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. W. Wingrave: Clinical Pathology.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Ferrier: Cases in the Wards.

WEDNESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. M. White: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. F. W. Mott: The Causes of Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball and Dr. Davies: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Robinson: Gynæcological.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Skin (Dr. Meachen), Eye (Mr. Brooks), Medical Out-patient (Dr. Whipham).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye. 3.30 P.M.: Special Lecture:—Mr. Cargill: Optic Neuritis.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell-square, W.C.).—5 P.M.: Harben Lecture: Prof. Dr. P. Ehrlich: Experimental Researches on Specific Therapeutics.

THURSDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. F. W. Mott: The Causes of Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Clinical Lecture:—Dr. Davis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting), Surgical Out-patient (Mr. Carson). 3 P.M.: Medical In-patient (Dr. Chappel).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M.: Operations. 2.30 P.M.: Dr. G. Rankin: Medicine. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 2.30 P.M.: Special Lecture:—Dr. Rankin: Angina Pectoris.

CHARING CROSS HOSPITAL.—4 P.M.: Mr. Daniel: Demonstration (Surgical). (Post-Graduate Course.)

UNIVERSITY OF BIRMINGHAM, FACULTY OF MEDICINE (Medical Lecture Theatre).—4 P.M.: Post-Graduate Lecture:—Dr. J. Miller: Opsonins.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell-square, W.C.).—5 P.M.: Special Lecture:—Prof. G. S. Woodhead: Blood Immunity.

FRIDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. H. Tilley: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball: Diseases of the Throat, Nose, and Ear. X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Clinical Lecture:—Mr. P. Dunn.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—9.30 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld), Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. Armour: Surgical Treatment of Infantile Paralysis.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration: Dr. W. Wingrave: Clinical Pathology.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell square, W.C.).—5 P.M.: Harben Lecture: Prof. Dr. P. Ehrlich: Experimental Researches on Specific Therapeutics.

SATURDAY (8th).—LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball and Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of the Eye. 2.30 P.M.: Operations.

EDITORIAL NOTICES.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

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